

# Concerns About The Integrity of The Scientific Research Process—Focus On Recent Negative Publications Regarding Nutrition, Multivitamins, Fish Oil And Cardiovascular Disease



Alex Vasquez, DC, ND, DO; Joseph Pizzorno, ND, Editor in Chief

## Abstract

The next step in reestablishing credibility seems to us honesty and recognizing we all share a common goal of the health and wellness of the human community and the planet. Everyone agrees that the current healthcare system, despite its many incredible successes, is also

showing its limitations and is no longer sustainable. We believe the solution starts with us the researchers and editors. A good first step might be formally recognizing the errors and showing how we can and *intend* to get better.

Evidence-based medicine—by definition—requires objective, reliable and accurate research and reviews from which to make the best decisions in patient care and public policy. The causes of inaccurate information, ranging from presumably innocent mistakes all the way to apparently intentional fraud, affect all scientific and biomedical disciplines.<sup>1</sup> While these accidental and intentional errors can derail our understanding of diseases and impact tens of thousands of affected patients, such inaccuracies in the field of nutrition can impact hundreds of millions of people worldwide.<sup>2</sup> While fractions of the population succumb to a specific disease that may need drug therapy, the entire human population eats food and is directly affected by nutrition research. Further, the science of nutrition is particularly contentious and territorial. A great irony of nutrition research is that most of it is conducted by healthcare professionals with little to no formal training in nutrition. Clinical therapeutic nutrition is not taught in the vast majority of medical schools<sup>3-5</sup> nor in post-graduate medical training programs<sup>6</sup>, including those specialties that are obviously impacted by dietary intake such as gastroenterology<sup>7</sup> and cardiology.<sup>8,9</sup> Despite this absence of training in clinical nutrition, the medical profession proclaims itself authoritative on all health-related topics, including the entire territory of clinical nutrition.<sup>10</sup> A major and serious problem arises when unskilled and invalid research is published by authors (including nonphysician journalists<sup>11</sup>) in major journals which mischaracterizes the validity of nutrition interventions (e.g., essentially always concluding that nutritional interventions are inefficacious

or potentially hazardous) and then such research is used politically and in the media to disparage, restrict and regulate practitioners and nutrition supplement industry<sup>12</sup> to the detriment of human health.

Several factors disrupting the integrity of nutrition research are commonly found in studies published by “elite” universities in “top-tier” journals, which are then republished and distributed as “headlining news” in newspapers, magazines, and television via which they ultimately influence patient care, government policy and health outcomes for tens/hundreds of millions of people. This editorial provides several recent examples of questionable nutrition research and publications, lists possible causes and suggests some proposed solutions. Given that all aspects of healthcare are dependent upon the integrity of the educational, investigative and publication processes, the advancements of clinical medicine and population-wide health improvements are hindered by accidental and intentional ignorance in nutrition education and research.

## Recent examples of questionable nutrition publications from major journals

In the following subsection, we review recent examples of questionable or inaccurate publications related to nutrition. Perceived shortcomings are documented with both citations here and links to more detailed and authoritative reviews and video presentations. In some instances, speculations regarding the cause and consequences of identified errors are provided.

**Vitamin and Mineral Supplements: What Clinicians Need to Know (JAMA—Journal of the American Medical Association 2018 Mar).** In this recent publication, authors Manson and Bassuk<sup>10</sup> attempt to review “what clinicians need to know” about “vitamin and mineral supplements” within a span of two pages. Such a publication apparently attempts to simplify the entire field of clinical nutrition to a ridiculous diminution and by such brevity must contain oversimplifications that are ultimately misleading. Oddly and clearly discordant with most reviews on pharmacotherapeutics, such nutrition reviews in medical journals commonly start with overtures reviewing the popularity of nutritional supplements (“52% of US adults reported use of at least one supplement product”), the financial size of the market (“\$30 billion industry in the United States”), sweeping generalizations that claim inefficacy of the entire genre (“most randomized clinical trials of vitamin and mineral supplements have not demonstrated clear benefits”), and allusions to “harmful effects” and the need to “curb inappropriate use of such supplements except that “clinicians may wish to favor prescription products.” Revealingly, the authors make several mentions of “folic acid” but without any mention of the other and clinically preferred forms of the nutrient as folinic acid and methylfolate; likewise, “vitamin B<sub>12</sub>” is discussed without differentiation of its various forms: cyanocobalamin, hydroxocobalamin, adenosylcobalamin and methylcobalamin. “Vitamin D” is referenced without distinction of ergocalciferol from cholecalciferol as if these are equipotent when in fact the latter is generally considered more potent and has some important physiological differences.<sup>13-15</sup> Further, inaccurate dosage recommendations are made despite overwhelming evidence that the cited doses are inadequate by an order of magnitude.<sup>16-20</sup> This is further aggravated by the foundational misperception that a nutrient can be studied as an isolated molecule like a drug, but in reality nutrients always function within biochemical networks of interaction and interdependency that require multiple nutrients and affect multiple pathways and physiologic systems. Studying supplemental vitamin D without paying attention to the status of magnesium, vitamins A and K<sub>2</sub> is an effective way to ensure negative results and adverse reactions. Citing clinical trials that failed to assess baseline nutrient intake is akin to a drug trial that failed to inquire about and document baseline pharmacotherapy and polypharmacy. “Vitamin K” is mentioned without distinction of important dosing and effect differences among K<sub>1</sub> (phyloquinone), K<sub>2</sub> (menaquinone-4), K<sub>3</sub> (menadione), and K<sub>7</sub> (menaquinone-7).<sup>21</sup> As a final example, the authors state that “calcium supplements may increase the risk for kidney stones” but make no mention whatsoever of mitigating this risk with diet modification, magnesium, citrate or urinary alkalinization.<sup>22</sup> In short, their review is impressively lacking in important details that clinicians legitimately need to know regarding

vitamin and mineral supplements; as such we consider it a misleading representation of the field, especially given that the publication is directed to an audience of medical physicians with no formal training and thus no background information nor evaluative perspective on the topic.

**Associations of Omega-3 Fatty Acid Supplement Use With Cardiovascular Disease Risks: Meta-analysis of 10 Trials Involving 77917 Individuals (JAMA Cardiology 2018 Mar).** Conclusions from this meta-analysis<sup>23</sup> were echoed (See illustration 1: The pharmaceutical-journal-news echo chamber.) in newspapers, magazines, and throughout the internet, thereby ultimately influencing hundreds of millions of healthcare recipients.<sup>24</sup> Per video critique by Vasquez<sup>25</sup>, important shortcomings of this review include (1) unjustified selective exclusion of data, (2) non-therapeutic dosing, (3) use of unnatural/semisynthetic form of fish oil, (4) conclusions at odds with data, (5) pro-pharma conflicts of interest among authors, publication, and supporting organizations, and—related to critique #2 aforementioned—(6) no mention anywhere in the article of the importance of the omega-3 index, the concept and use of which is highly important as documented more than 20 years previously<sup>26</sup> and repeatedly validated and widely published in leading scientific<sup>27</sup> and cardiology specialty journals.<sup>28</sup>

**Supplemental Vitamins and Minerals for CVD Prevention and Treatment (Journal of the American College of Cardiology 2018 Jun).** Problems with this publication<sup>29</sup> include (1) paid conflicts of interest among the journal’s editorial/review staff<sup>30</sup>, (2) conflicts of interest with the drug and processed food industries, (3) unscientific exclusion of data, (4) removal of data that countered the overall narrative of the article, eg, “Studies containing selenium were removed from the analysis of antioxidants due to the high percentage of these studies of the left side of the unity line versus the right side of the unity line in the antioxidant forest plot. This is compared to other components of antioxidant mixtures. Removal of the selenium studies resulted in a significant increase in all-cause mortality”, (5) failure to maintain basic clinical and pharmacologic standards, and (6) confusion and equivocation with regard to details of nutritional interventions.<sup>31</sup>

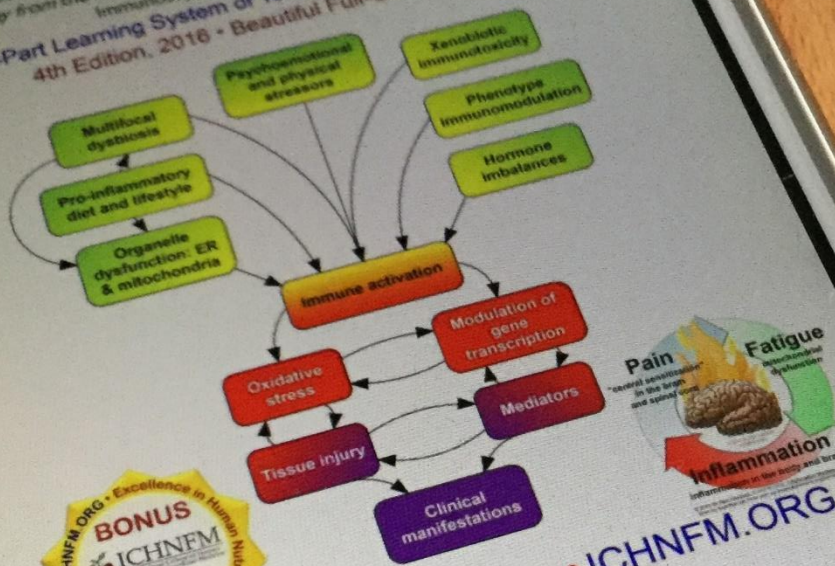
**Effects of n-3 Fatty Acid Supplements in Diabetes Mellitus (New England Journal of Medicine 2018 Aug/Oct).** Known as the ASCEND study<sup>32</sup>, this large long-term clinical trial compared effects of low-dose fish oil against low-dose olive oil, looking for a difference in effect on cardiovascular outcomes. Per critiques by Vasquez<sup>33</sup>, major shortcomings of this trial include (1) erroneous description and use of olive oil as “placebo”, and (2) conflicts of interest with the pharmaceutical industry, including supervision of key meetings by drug



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industry sponsors. In one of the most bizarre statements we have ever read in our 60+ years of reviewing medical literature, this article notes, “Mylan, Solvay and Abbott had nonvoting representation at meetings of the steering committee of the study and provided comments regarding the trial design and draft manuscript...” Olive oil cannot be considered a placebo given the well-established facts that it is one of the most potent anti-inflammatory and cardioprotective foods ever discovered; in fact, a short review published 15 years ago in the self-same *New England Journal of Medicine* noted that olive oil consumption in the Mediterranean diet provides such consumers with “very low rates of coronary heart disease and certain types of cancer and [had] a long life expectancy.”<sup>34</sup> Cardioprotective, anti-inflammatory and antioxidant components of olive oil include squalene, oleic acid, and the numerous and abundant phytochemicals. The metabolic and cardioprotective benefits of olive oil are realized with consumption of low doses.<sup>35</sup> In fact, the antiinflammatory benefits of olive oil are so potent that a clinical trial<sup>36</sup> published in 1991 stated, “Olive oil can no longer confidently be used as a placebo control.” Further, 10% of ASCEND subjects were already taking fish oil (n3) supplementation at baseline, with corresponding omega-3 indexes of 6.6% and 7.1%, remarkably higher than the average 4% typical of Western societies.<sup>37</sup> Consistent with the post-publication peer-review process, Vasquez<sup>38</sup> punctually submitted a guideline-conforming critique of this research; but the critique was rejected by the *New England Journal of Medicine* with the excuse that the journal did not have sufficient print space for a critique of less than 175 words despite the original article length of roughly 7,000 words.

**Cardiovascular Risk Reduction with Icosapent Ethyl for Hypertriglyceridemia (New England Journal of Medicine 2019 Jan) and Prescription-strength omega-3 fatty acids to prevent heart disease? “A drug made from a highly purified fat from fish reduced cardiovascular events in people with heart disease or diabetes” (Harvard Heart Letter 2019 Feb):** The original article<sup>39</sup> and related publication by Harvard Medical School/Harvard Heart Letter<sup>40</sup> both report a trial sponsored by the prescription drug manufacturer wherein 4 grams per day of “prescription-strength omega-3 fatty acids” from fish oil were compared against “a placebo that contains mineral oil.” As noted by Vasquez<sup>41</sup>, 4 grams per day of concentrated fish oil would be expected to produce more robust benefits than did the previously mentioned articles that used only 25% of this dose; as one would expect from the study of pharmacology, fish oil is similar to any other therapeutic in that its distribution and effects demonstrate a dose-response relationship. Furthermore, the mineral oil purportedly used as a “placebo” is very clearly not an inert substance, as has been well known and documented, for example in the *Journal of the American Medical Association*, for more than

70 years.<sup>42-45</sup> Mineral oil is known to block absorption of fat-soluble antiinflammatory, anti-oxidant, and cardioprotective nutrients, specifically but not exclusively vitamin A, vitamin D, and beta-carotene. Mineral oil may also reduce absorption of cardioprotective drugs, as noted in the original study by Bhatt et al, who questioned the possibility “if mineral oil in the placebo affected statin absorption in some patients, this might have contributed to differences in outcomes between the groups”; the authors made no attempt to assess for this possibility nor for iatrogenic malabsorption of nutrients. Not surprisingly, and perhaps also due to pro-inflammatory stimulation of the immune system, administration of mineral oil causes significant and measurable adverse effects on markers of cardiovascular disease risk, as noted in a remarkably insightful article by Herper<sup>46</sup> published in *Forbes*. *Mineral oil is absorbed from the intestines and is deposited in skin, subcutaneous tissues, intestinal wall, regional lymph nodes, liver, spleen, lungs, and bone marrow.*<sup>47-49</sup> The paradoxical use of a high-dose fish oil product against metabolically adverse/deleterious mineral oil would be expected to greatly favor the fish oil product, as noted by Herper.

### Why Is So Much Of The Nutritional Medicine Research So Flawed?

Trying to think through why these obviously erroneous studies were published, we see basically only two options: ignorance or medical/financial priorities.

#### Ignorance

We are willing to consider that the following are due to lack of adequate education in nutrition.

**Olive Oil Is Not Inert.** Comparing two compounds that are both effective is obviously not going to show much difference in outcomes. Some of the studies critiqued above used fish oil VS olive oil. The authors and editors should have been aware that olive oil is cardioprotective and antiinflammatory since the data has been consistently published for almost 60 years, including in the *NEJM*.

**Mineral Oil Is Not Inert.** On the other hand, plenty of research shows multiple adverse physiological effects of mineral oil, making it a profoundly inappropriate placebo. Relative to long-term administration of mineral oil, almost anything “not too toxic” will look good by comparison. Examples of the ill effects of mineral oil are noted above.

**Ignorance of Previous Standards For Assessing Omega-3 Status.** The omega-3 index was validated some 20 years ago. Why wasn't it used to assess both initial status and impact of intervention? How can a major review of fish oil trials—especially in a cardiology specialty journal—fail to make any mention whatsoever about appropriate dosing, adjustments for body size (especially given that many subjects were overweight or obese), and the objectively measurable (for compliance and treatment effect) and consistently validated omega-3 index?

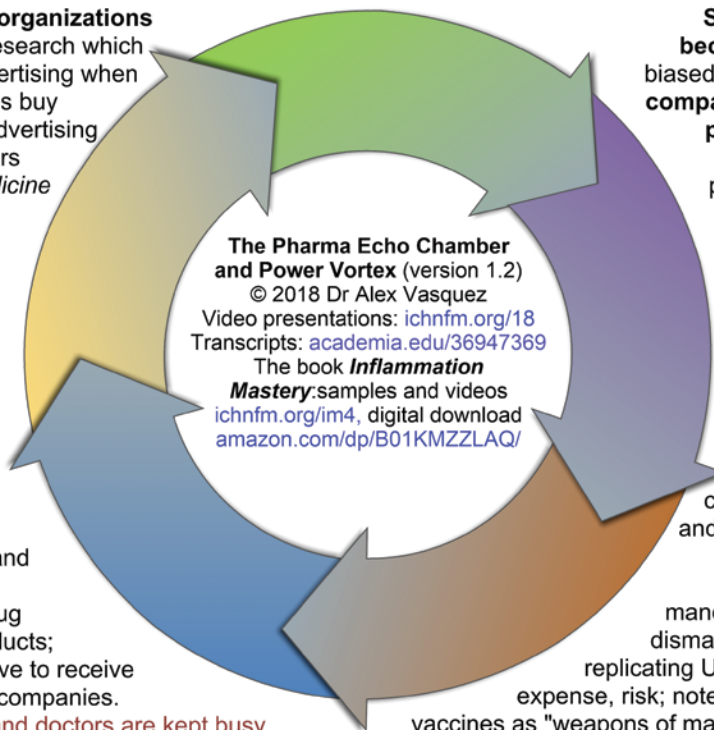


**Figure 1.** The pharmaceutical-journal-news echo chamber: Medical journals have inherent biases to publish pro-drug and anti-nutrition articles, both to please their pharmaceutical sponsors and to maintain their pharmacocentric paradigms. Newspapers and television repeat the conclusions from medical journals, thereby dispersing the information to hundreds of millions of persons. Television shows also glorify medicine and drugs in programs featuring “medical heroes” ranging from Doogie Howser MD to MASH to House MD. As the drug paradigm is strengthened financially and socially, drug companies have more money to buy more political influence (ie, transitioning from “echo chamber” to “power vortex”), including directly paying politicians to pass drug-friendly protective laws and mandatory drug requirements. Influence from the pharmaceutical and processed food industries is noted in international policies determining use of (for example) vaccines, genetically modified foods, and breast feeding. Meanwhile, medical professionals are kept overly busy, burnt-out, and untrained in nutrition, thereby leaving them vulnerable to misinformation, especially in nutrition. Drug companies pay for and “supervise” research via universities, while also paying textbook authors, journal editors, and medical societies that publish treatment guidelines.

**Headline-making newspapers, magazines, and television programs** re-publish pro-drug information to the delight of their drug advertisers. Positive news about drugs and vaccines is headlined and featured, while actionable information about nutrition is unavailable or tainted with controversy. Medicine-positive television features “medical heroes” reinforcing medical authority, medical dependency, and the drugs-as-salvation paradigms. News stories highlighting fear of infectious diseases serve to maintain constant fear, medical dependency, and fear of other societies (eg, “Africanized” bees, Zika, El Nio, Asian flu). Many of these stories are revealed as lies after they have served their political purposes; *PolitiFact* named the panicked US response to Ebola as the 2014 “Lie of the Year”, *Time* Dec 15, 2014

**Medical journals/organizations** publish pro-drug research which becomes paid advertising when the drug companies buy reprints or direct advertising for millions of dollars (Smith, *PLOS Medicine* 2005)

**Drug companies infiltrate media, television shows, education, and public policy.** Drug companies pay “researchers”, professors, and editors to publish and teach information favorable to the drug paradigm and products; medical schools love to receive funding from drug companies. **Medical students and doctors are kept busy, exhausted, and fearfully compliant; anyone who questions the drug paradigm, especially vaccines, is a target for censure, expulsion.**



**Science and popular media becomes an echo chamber of biased pro-drug propaganda; drug companies pay US politicians to promote pro-drug laws** (eg, mandatory vaccinations), protect drug companies from liability (eg, National Childhood Vaccine Injury Act of 1986), and promote international expansion.

**Drug companies become more profitable and therefore more powerful than governments.** Drug companies utilize US political and military power by infiltrating international trade-banking agreements, eg, enforcing mandatory drug/vaccine policies, dismantling consumer protections, replicating US's healthcare bureaucracy, expense, risk; note the Orwellian description of vaccines as “weapons of mass protection” (Milstien et al, *Health Affairs* 2006) and the deployment of military forces under the banner of humanitarian health aid (National armies for global health? *Lancet* 2014 Oct 25)

**Medical/Financial Political**

Obviously, research integrity is jeopardized when it becomes dependent or overly close with funding sources or political organizations. “Research for profit” is often hidden or obfuscated.

**Pay-To-Play Research.** The Oxford study ASCEND claimed that all authors were “independent scientists” but the online documents showed that the majority of authors

were rewarded by drug companies; and the article itself stated that the drug company supervised key meetings where their paid consultants were working; several drug companies “had nonvoting representation at meetings of the steering committee of the study and provided comments regarding the trial design and draft manuscript...” Could the financial conflicts of interest or potential for industry influence be more obvious? Why

weren't the conflicts of interest printed within the same publication wherein the authors called themselves "independent investigators." Why were university and nonprofit affiliations listed so clearly whereas drug industry connections were omitted from the printed article and available only in separate documents online?

**Hidden Data.** The 2018 NEJM "fish oil vs mineral oil" study obscured the identity of the placebo and also hid the adverse effects in the online materials *separate from the main publication*. This means very few researchers or busy doctors saw the adverse effects by reading the published study. Separating key data from the main publication by the inconvenient or unsuspected use of cumbersome online "supplemental materials" surely prevents many if not most readers from seeing important information and making appropriate and contextualized interpretations of the data. Why was important information separated from the primary publication? When physicians are given a reprint of the study, most of them will not have immediate access to the accessory online documents that contain important information.

**Common Problem of Inaccuracy In Published Abstracts.** The reading of any study begins with the reading of the title and abstract of the article. Many and perhaps most busy healthcare professionals, among those who are even willing to independently keep up with the research, read only the abstracts, not the full study. "Abstract-only" reading is usually due to time limitations, but many major journals require a fee to access the full study, while the abstract is available for free either at the publisher's website or within a cataloged database. Unless they are part of an academic health center or a clinical organization that is large enough to afford the huge subscription fees, most clinicians never see the actual research. Many studies of clinical trial abstract quality have been published, consistently showing multiple types of problems. A review study published a full 20 years ago found that 18%-68% of the abstracts in 5 major medical journals (*Annals of Internal Medicine*, *BMJ*, *JAMA*, *Lancet*, and *New England Journal of Medicine*) contain multiple factual inaccuracies.<sup>50</sup> Another example study looked at major journals like *NEJM*, *JAMA*, *BMJ* and *Lancet* and found less than 10% clearly defined blinding, less than 15% reported numbers lost to follow up and only half reported ADRs.<sup>51</sup> In our extensive reading of medical research, we have found multiple examples of abstracts that report the exact opposite of the actual data in the study (See IMCJ editorial 14.4 for an example). We are admonished to practice evidence-based medicine. But what happens when the "evidence" presented in the published abstract is exactly wrong?

Now, with the growing and strategic popularity of separating key findings and authors' financial ties in online "supplementary materials", has medical publishing yet further and paradoxically obscured and encumbered the proper evaluation of scientific publications?

### **Problem Of Drug Advertising Distorting Publication Of Studies On Dietary Supplements.**

Readers of research articles assume, appropriately but not accurately, total separation of a journal's editorial and marketing divisions. Unfortunately, such separation of scientific content from industry payments (and thus influence) does not appear to be the norm in many major journals. One study looked at the correlation between the number of pharmaceutical advertisements in 11 major medical journals and their publication of articles on dietary supplements. They found that journals with the most pharmaceutical ads published: (1) fewer major articles about dietary supplements, (2) when such articles were published they were far more likely to conclude that dietary supplements were unsafe, and (3) were 50% more likely to publish studies showing dietary supplements were clinically ineffective. All these findings of bias were statistically significant.<sup>52</sup>

**Pay-To-Publish.** The authors are not the only ones with conflicts of interests. With the huge surge in "open-access journals", authors commonly pay journals (and thus editors) for publication. The potential for conflict of interest is obvious and substantial: editors of such journals have a financial incentive to accept articles, likely including those that they might have otherwise rejected. Several studies have documented predatory behaviors by editors to recruit fees, high susceptibility to falsified credentials in editorial board members, and little to no rigor in their review processes.<sup>53</sup> We are not saying that all open-access journals are problematic, but rather that the potential for conflict of interest, ie, "incentivized acceptance", is especially high.

### **Thoughts on How to Improve Nutrition Research**

The flaws we documented and exemplified above are clearly preventable by researchers making better study design decisions. Equally clear is that editors should not accept papers until such obvious problems are resolved. We propose the following for consideration by both authors and editors.

**Micromanagement.** We can develop formal rules and governing bodies to certify and monitor editors. In turn, the editors in a very formalized and rigorous manner micromanage authors to prevent problems such as: systematic bias, nutrients being studied at inappropriate dosages, in ineffective forms, or with no attention to the full matrix in which they function, etc. We are not advocating for this authoritarian solution, but must admit it is a pathway.

**Improve the Quality of Abstracts.** The CONSORT reporting guidelines for the abstracts of randomized clinical trials is a good starting point. It provides clear guidelines and a checklist. Unfortunately, virtually no journals are following these guidelines. One study evaluated the abstracts of 395 randomized clinical trials published in anesthesia journals in 2010 and in 2016 to



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- 9) Scleroderma & Systemic Sclerosis
- 10) Vasculitic Diseases
- 11) Spondyloarthropathies & Reactive Arthritis
- 12) Sjögren Syndrome/Disease
- 13) Raynaud's Syndrome/Phenomenon/Disorder





determine adherence to CONSORT and trend using a 16 point scale. The good news is that there was a statistically significant improvement. The bad news is that the average rating increased from only 4 to only 6 points out of a total of 16 possible quality points. Not a single abstract scored 16 and 75% met fewer than ½ the guidelines.<sup>54</sup>

**Competence in Nutrition.** We can teach editors, researchers and doctors to be nutritionally competent (which they should have learned in medical school) so that when they evaluate or use nutrition research, they hold it to a higher level of intellectual and scientific competence so that junk research is not published in the first place nor thereafter accepted by medical professionals.

**Reestablish Integrity.** We need to think more broadly about how we teach ethics. Medical students commonly receive training in “medical ethics”, but most of the exercises are specific to clinical situations appropriate for inexperienced and naïve medical students. We as educators need to teach broader conceptualizations of ethics that serve to create and maintain a healthy and empowered healthcare community making clinical decisions based on the best real research. In addition, journals themselves need to be more accepting and responsive to post-publication critiques. They must be willing to retract, or at least bring substantial attention, to previously published articles that are shown to be problematic.

**Update Education of Current Practitioners and Reform Licensing Bodies.** Clinicians who want to independently stay up with the research need to be better taught to recognize and combat unreliable research. However, in this authoritarian age we also need to curtail overzealous licensing boards from restricting a practitioner from exercising his or her best clinical judgment.

## Summary

The next step in reestablishing credibility seems to us honesty and recognizing we all share a common goal of the health and wellness of the human community and the planet. Everyone agrees that the current healthcare system, despite its many incredible successes, is also showing its limitations and is no longer sustainable. We believe the solution starts with us the researchers and editors. A good first step might be formally recognizing the errors and showing how we can and *intend* to get better.

**Full disclosure.** JP: As fully detailed in Editorial 8.6, JP is a scientific consultant to Bioclinic Naturals, a bioceuticals company. No studies using any of their proprietary products have been published in *IMCJ*.

AV: In addition to having authored approximately 100 articles and letters in a wide range of disciplines and peer-reviewed journals, AV is the author of the 1200-page *Inflammation Mastery, 4th Edition (2016)*, also published in two volumes as *Textbook of Clinical Nutrition and Functional Medicine* with sections excerpted as *Human Microbiome and Dysbiosis in Clinical Disease, Antiviral Nutrition, and Brain Inflammation in Chronic Pain,*

*Migraine, and Fibromyalgia.* Dr Vasquez has served as a consultant to Biotics Research Corporation.

## In This Issue

We start this issue with appreciation for Associate Editor David Riley, MD who set up and lead the excellent Case Report series for *IMCJ*. With great sadness we announce that David is retiring from his editorial position. Thank you David for your excellent work demonstrating that carefully and rigorously designed patient reports are a credible way of providing scientific documentation of efficacy of the personalized medicine we advocate.

As usual, Associate Editor Jeffrey Bland, PhD kicks off this issue. His very interesting Commentary dives deeply into the fasting and para-fasting research. Having myself supervised hundreds of 4- to 30-day water-only fasts, I’ve substantial experience in this area. This is a good example of how using PubMed-indexed research totally misses the hundreds of years of successful clinical fasting expertise that is found in natural medicine books and clinicians. A good example to the non-MD community of the importance of documenting our work. Those interested in learning more about this very useful therapeutic modality will find the fasting chapter (first published in 1985) in my *Textbook of Natural Medicine* very helpful, as well as the patient handouts in the Appendix.

George W. Cody, JD, MA, continues his series on the origins of integrative medicine. In this article he covers some of the key contributions from the chiropractic profession.

Regular contributor John Weeks discusses the huge challenge facing doctors of integrative medicine who use compounding pharmacists to personalize drug prescriptions for their patients. This problem is fully addressed by attorney Alan Dumoff, JD, MSW who has lead the fight to protect this important resource for our patients. The article he wrote for *IMCJ* can be found in issue 17.3. As usual, he has many other interesting briefs about the politics and business of this medicine. The results of the poll assessing the percent of cancer patients who believe alternative medicine has a cure are quite surprising.

Tom Blue has written two interesting articles on public interest in this medicine and the many challenges facing clinicians trying to make this work financially. His several suggestions are worth serious consideration. His considerable experience with concierge medicine provides useful insights.

One of the most fun and gratifying responsibilities as editor is being able to interview the special people who have created and practice this medicine. Managing Editor Craig Gustafson interviewed expert functional medicine neurologist and my friend David Haase, MD. His insightful ideas on stress, pain, and addiction are very helpful, especially in this era of prescription pain medication abuse.



Original research by David S. Riley, MD; Viktor G. Lizogub, PhD; Marianne Heger, MD; Petra Funk, PhD; Heiko Mueller, Walter Lehmacher evaluates the efficacy of *Pelargonium sidoides* root in the treatment of the common cold. This multi-center, randomized, double-blind phase III clinical trial with 105 adults showed clear efficacy. Having personally used Umcka for over 10 years, I can attest that these results are consistent with my experience.

Self-insured corporations have, in my experience, been the most receptive to health promotion. Corporate wellness programs are a great way to demonstrate the efficacy of the concepts of our medicine. Managing editor Craig Gustafson interviewed Richard E. Johnson, JD, a health strategy expert. Those interested in working in this area will find a lot of value here.

Remarkable serendipity that Associate Editor Bill Benda, MD finishes the issue with the same concerns with which we started: Time to get back to the Truth. Journals of science are published as part of our community efforts to objectively understand the world. The truth decay in research which Alex and I addressed seems a sad symptom apparently escalating throughout our society.



Joseph Pizzorno, ND, Editor in Chief  
drpizzorno@innovisionhm.com  
<http://twitter.com/drpizzorno>

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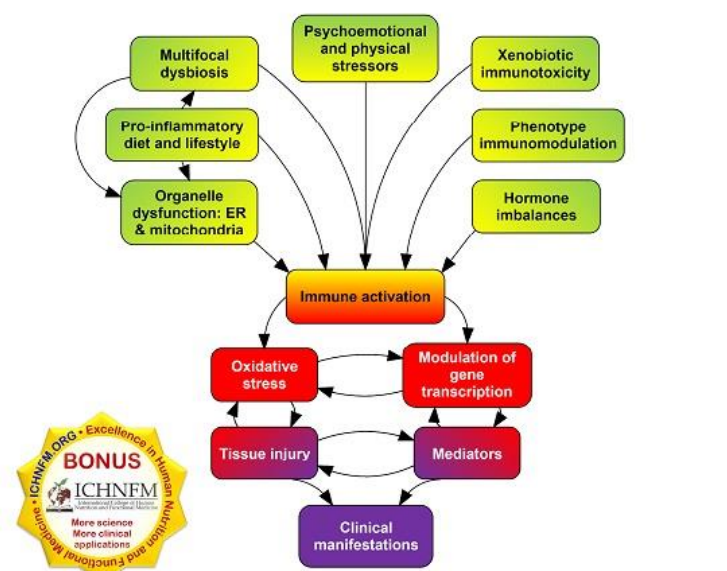
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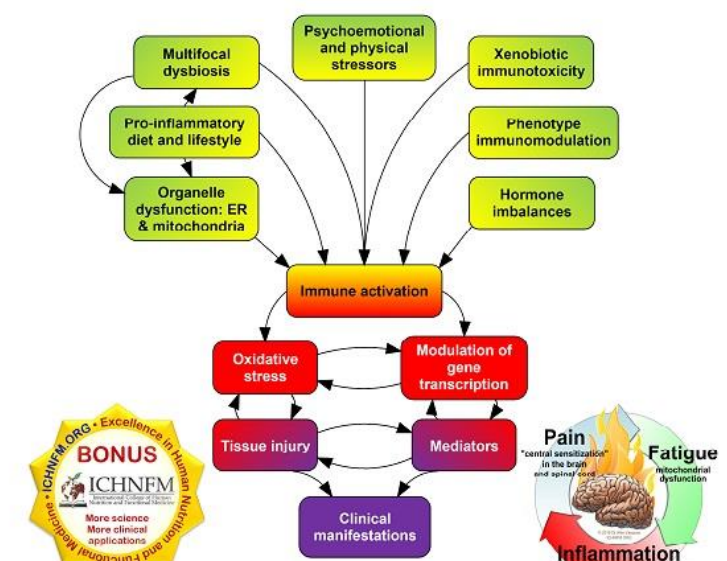
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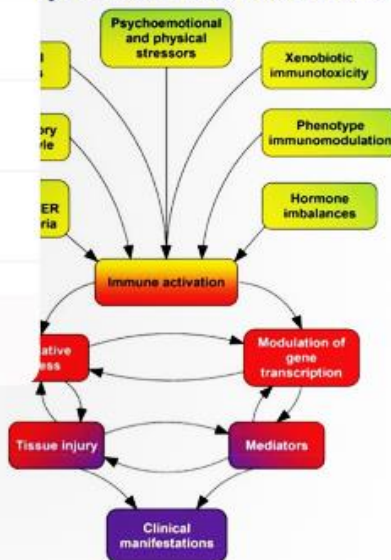
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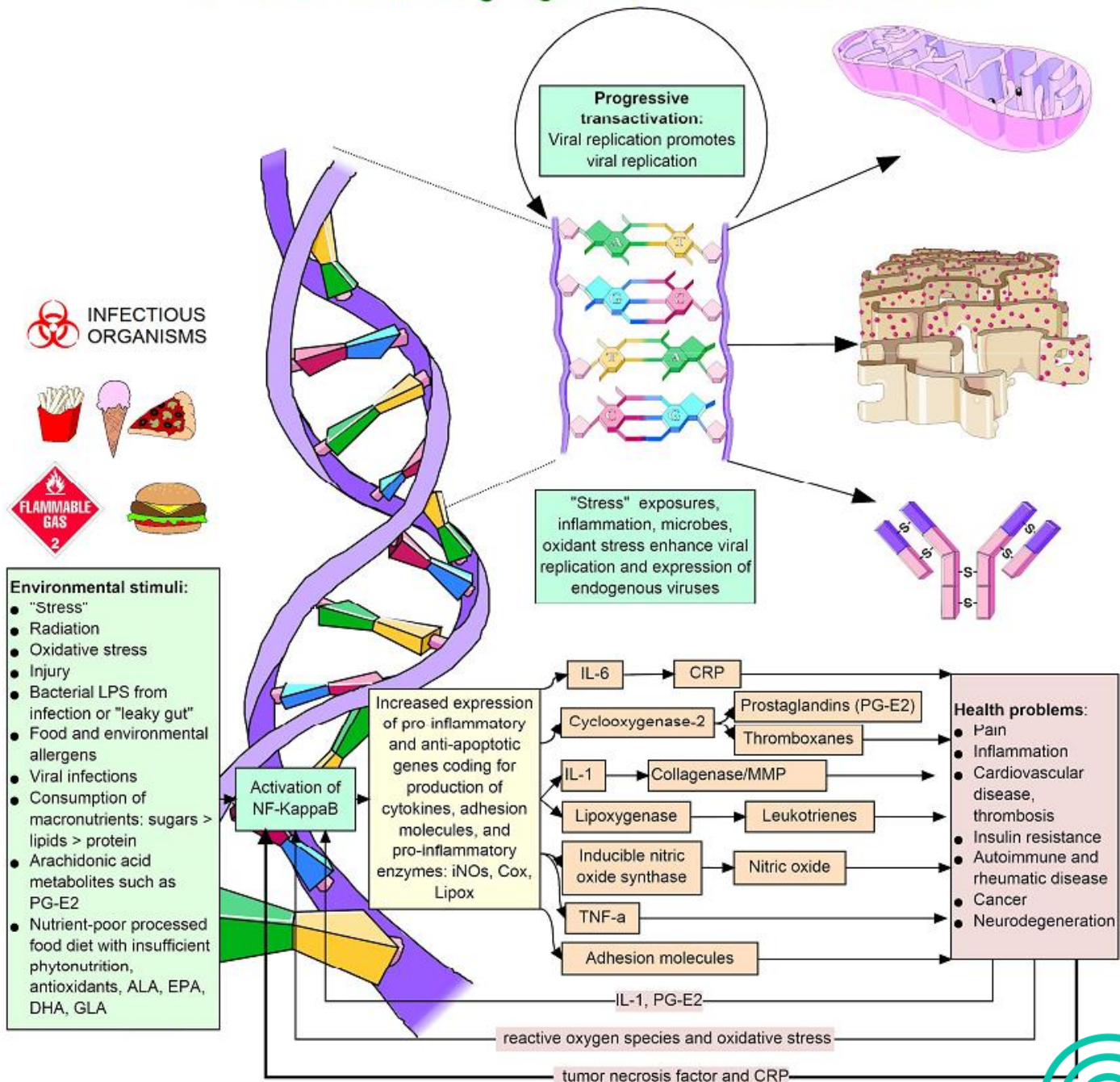
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### Vitamins Against Viruses: Implausible Pro-Vaccine Publications Contrasted Against Ignored Public Health Campaigns and Double-Blind Placebo-Controlled Clinical Trials

#### Introduction

As an author, presenter, editor, and careful reader of research and public policy, I have been concerned for several years about potentially false attribution of efficacy to vaccines during public health campaigns and major infrastructure investments that concurrently provided access to education, improved sanitation, improved diet (alongside immune-enhancing nutritional supplementation, most commonly with vitamins A and D, zinc, and iron), relocations of millions of people along with changes in their living and working circumstances (which would be expected to change infectious disease patterns, e.g., relocating people away from farms obviously reduces their exposure to *Clostridium tetani* [the anaerobic bacillus of tetanus] which is found primarily in soil contaminated by fecal material from [especially ruminant] animals such as cattle, sheep, and goats). With the April 2019 publication of several very unusual articles stemming from the *British Medical Journal* (BMJ), the time arrived to explore some of these concerns in a structured and public format. A legitimate concern is that science and public opinion are being inappropriately manipulated to favor a pharmaceutical/vaccination paradigm while lower cost, more widely available, safer and more efficacious nutritional interventions are being sidelined or intentionally ignored. In the current instance, overzealous endorsement and praise was given to a pharmaceutical intervention while a nationwide nutritional supplementation program supported by double-blind placebo-controlled trials was completely—and perhaps intentionally and strategically—ignored, then blocked by the journal from further discussion.

**Pro-pharma echo chamber resounds:** I first became aware of the two new (April 2019) BMJ publications (article by Palmer et al<sup>1</sup> and editorial by Brotherton<sup>2</sup>) via the derived “news” article published on 4 April in *The Guardian* titled “HPV rates tumble after routine vaccination” by Sarah Boseley, the publication’s “Health Editor.” With review of their website I found that *The Guardian* has published an impressive number of pro-vaccine articles devoid of critical thought or balanced analysis, including “Cervical cancer could be

eliminated in most countries by 2100 – Millions of cases could be prevented with high HPV vaccine and screening coverage” (20 Feb 2019), “Teenage boys to be vaccinated against cancer-causing HPV: Inoculation program will be expanded to cover 12- and 13-year-old boys in England” (24 Jul 2018), “Boys should get HPV jab to protect against cancer, health advisers say: Ministers urged to take swift action to extend immunization under a gender-neutral program” (18 Jul 2018), “Cervical cancer deaths in over-50s predicted to rise sharply in England – Rates of diagnoses and death set to rise in women not vaccinated against HPV, but likely to be almost eradicated in younger women” (19 Dec 2017), and “HPV vaccination should be extended to gay men” (12 Jun 2012). One could hardly envision a more pro-drug publication, regularly producing “news articles” that function as infomercials, glorifying any real or imagined benefits of drugs while making zero or minimal mention of any adverse effects, or refuting adverse effects, but without sufficient substantiation, as in “Cervical cancer vaccination ‘most unlikely’ to have caused girl’s death” (29 Sep 2009). Likewise, the BMJ article was re-reported and exalted throughout print and video media in the United States by outlets such as Fox News’ “UK’s HPV vaccination program ‘dramatically’ reduces risk of cervical cancer”<sup>3</sup> and the physician-oriented *Medscape*.<sup>4</sup> Such articles obviously serve to direct public and political opinion in favor of medicalization to the delight of the pharmaceutical and mainstream medical industries; the combined reach of the original articles and their echo-chamber derivatives is certainly in the tens of millions if not hundreds of millions of people. With regard to the recent article, the imbalanced praise and absence of rational concerns published in favor of the vaccine appeared quite biased; I soon accessed the original research, as discussed below.

**BMJ’s landmark publications in erroneous conclusions:** Anyone who has studied research design is aware of different types of clinical investigations and the limitations inherent in each. The “gold standard” of clinical research has been the randomized double-blind placebo-controlled clinical trial, preferably with a large population-representative cohort, preferably with a cross-over design if practical depending



on the logistics of the intervention. In any placebo-controlled trial, the placebo needs to be an inert substance, not—as is common with pharmaceutical and especially vaccine studies—a mislabeled “placebo” capable of causing harm and therefore reducing and obfuscating the relative risk (RR) compared to the active/test agent. Science is corrupted when unscrupulous researchers use active agents misbranded as “placebos” in order to make a given intervention look comparatively safe and effective (when compared against a harmful placebo, such as the recent studies using high-cost high-dose prescription fish oil against a false placebo of petroleum mineral oil)<sup>5</sup> or comparatively dangerous or ineffective (when compared against a safe and therapeutically active placebo, such as the recent reviews comparing low-dose fish oil against low-dose olive oil, both of which are antiinflammatory and cardioprotective).<sup>6</sup> Thus, the strategic use of inappropriate placebos and/or the intentional ignoring of confounding variables (such as population-wide health campaigns) serves to glorify the preselected pharmaceutical victor while providing the necessary “evidence of effectiveness” and justification for widespread implementation and multimillion \$/£/ € purchase. To the extent that such publications obfuscate the data and minimize appreciation of effective nutritional interventions, doctors and patients are inappropriately corralled into drug dependency while nutritional interventions with lower cost, wider availability, greater safety and efficacy—along with the numerous collateral benefits typically seen with nutritional supplementation—are withheld from general consideration. As detailed below, BMJ published a retrospective population-wide study that impossibly ascribed efficacy (by design, such studies cannot determine efficacy) to the HPV vaccine while ignoring the time-synchronized national public health campaign to improve vitamin D nutriture, whereas the latter has numerous lines of evidence supporting its clinically important efficacy against various types of HPV infection.

**Dr Vasquez replies with two “rapid responses” posted on BMJ.com:** To its credit, BMJ has a “rapid response” system that allows readers to publicly respond to articles and occasionally receive replies from the original authors; from the rapid responses posted, the journal’s Editors supposedly choose from among the responses those few deemed worthy of publication in the print and indexed version of the journal, as they did with my 2005 reply to an article that misused vitamin D in a clinical trial and then erroneously reported that vitamin D was inefficacious.<sup>7</sup> For the April 2019 BMJ publications, my first rapid response received no reply; the following two rewritten responses, both of which were posted on BMJ.com in response to the editorial and the original research, are contextualized and provided below. The complete texts of these replies are included here both for the convenience of readers and to also document these posted responses in the event that—as is common these days—the editors delete any legitimate questioning of the high-profit vaccine

paradigm. At the time of this writing, my replies are posted online at “Scotland’s public health programs and trends improving nutritional status should be considered when discussing HPV trends” (<https://www.bmj.com/content/365/bmj.l1375/rr-4> and externally archived at <https://www.academia.edu/39207517>) and “Scotland’s public health campaigns to improve vitamin D nutriture occurred within the same time-frame as HPV vaccination” (13 April 2019, <https://www.bmj.com/content/365/bmj.l1161/rr-8>, externally archived at <https://www.academia.edu/39201317>).

The editorial posted by the BMJ to accompany and contextualize the original research was unusual in several aspects. First, the editorial is described as “commissioned” which implies that the journal paid the author to write the piece, presumably—as noted by former BMJ Editor Richard Smith<sup>8</sup>—to sell reprints to the pharmaceutical industry and/or governmental and other pro-vaccine groups as “proof” in order to convince people to accept this intervention as valid and thereby promote sales and the resulting profit and political power; as such, their editorial functions as an informational and advertisement for vaccine sales. Second, and consistent with the view that the editorial is simply a publicity piece, the journal specifically notes that the editorial was “not peer-reviewed” which is remarkable considering that most people think that all articles in the so-called “top tier” and “big five” medical journals are legitimately processed and refereed prior to publication and indexing in Medline’s Pubmed ([ncbi.nlm.nih.gov/pubmed/30944088](http://ncbi.nlm.nih.gov/pubmed/30944088)). Third, I noticed that the disclosure as posted “The BMJ has judged that there are no disqualifying financial ties to commercial companies. The authors declare the following other interests: JMLB’s employer has received partial, unrestricted support (in the form of equipment) to conduct a randomised trial of primary HPV screening from Roche Molecular Systems” makes zero mention of the author’s research supported by Merck, makers of the HPV vaccination being discussed, revealed elsewhere as “JMLB has been an investigator on HPV epidemiology studies that received partial, unrestricted funding from Seqirus/Merck for laboratory components” (*Int J Gynecol Obstet* 2017; 138 (Suppl. 1): 7–14 DOI: 10.1002/ijgo.12186) and “JMLB has been an investigator in HPV epidemiological studies that have received partial unrestricted grants to support HPV typing components (cervical cancer typing study from Seqirus Australia, recurrent respiratory papillomatosis study from Merck Sharp and Dohme) and is an investigator on the Compass trial, which has received equipment and funding from Roche Molecular Systems and Roche Tissue Diagnostics, but JMLB reports no personal financial benefits” (*The Lancet*, 2019 February [thelancet.com/public-health](http://thelancet.com/public-health) Vol 4:e87). Fourth, Brotherton’s editorial is scientifically untenable, giving outlandish praise and stretching the boundaries of biological plausibility in support of the HPV vaccination advocated by the pro-vaccination group for which she works (Victorian Cytology Service [VCS] Foundation);<sup>9</sup>

she states that the results “unequivocally show high vaccine effectiveness” despite the fact that they completely ignored Scotland’s concurrent nationwide programs to improve vitamin D status, including giving free vitamin D supplements and advocating sunbathing. Fifth, everyone associated with this publication appears to have ignored the fact that retrospective population-wide studies cannot establish causality as can double-blind placebo-controlled trials but at best can establish temporal relationships, but only if all impactful factors are considered, which was obviously not done with this primary publication nor its glorifying editorial. Sixth, consistent with my model of the pharmaceutical echo chamber and the financial matrimony binding media with drug companies, international newspapers and other media trumpeted to the world the glory of this vaccine, failing to mention any risks, qualifications, other scientific interpretations and therapeutic possibilities. Seventh, the scientifically responsible action that the BMJ could have taken is to issue a public statement clarifying the appropriate interpretation of its published research and reigning in this unscientific hysteria; but the BMJ has failed to do so. The text of my rapid response to the Editorial posted on BMJ.com is as follows:

#### **Scotland’s public health programs and trends improving nutritional status should be considered when discussing HPV trends**

Julia Brotherton’s Editorial [1] accompanying the retrospective population study crediting vaccination against human papilloma virus (HPV) with reduction in HPV prevalence in Scotland [2] considers a variety of possibilities for the presumed success of the HPV vaccination program. However, her Editorial does not mention the concomitant public health programs organized by the Scottish Government and other groups to improve vitamin D nutrition throughout Scotland that occurred in the same time-frame. The Scottish Government recognized the high prevalence of vitamin D deficiency in its population and began recommending vitamin D supplementation not later than 2006. By 2009, coincident with the start of the HPV vaccination campaign in 2008, numerous vitamin D supplementation (and sun exposure) campaigns were being implemented throughout Scotland to combat the documented population-wide problem of vitamin D deficiency.

Our views of vitamin D experienced a paradigm shift in the early part of this century, with key publications starting in 1999 [3-6]. We now have increased awareness of vitamin D’s safety and roles in preventive medicine and public health, including reducing the burden of infectious diseases such as viral infections. Consistent with this evidence of safety and benefit, along with evidence that the human daily requirement is an order of magnitude greater

than previously believed [7], use of vitamin D supplementation began to increase slowly and then exponentially in the United States [8] and other countries, especially English-speaking societies, most notably the United Kingdom. Indeed, according to the Scottish Health Survey 2003 [9], use of dietary supplements such as vitamins (including vitamin D), fish oils (a source of vitamin D) and minerals (magnesium supplementation improves vitamin D status and is necessary for vitamin D activation, binding, transport, metabolism, and gene expression [10]) had already begun to increase between 1998 and 2003. Certainly not later than 2006, the Scottish Government was already recommending widespread use of vitamin D supplements (and sun exposure) to combat the high prevalence of vitamin D deficiency in Scotland [11-23].

Vitamin D supplementation has been the subject of several placebo-controlled trials documenting anti-inflammatory, antiviral, and anticancer effects. Correction of vitamin D deficiency has significant anti-inflammatory [24] and immunomodulatory [25] benefits. Vitamin D and its direct metabolites promote production of antimicrobial peptides which have antibacterial and antiviral properties, while also reducing viral replication by inhibiting the NF-kappaB pathway. Consistent with these immunomodulatory and antiviral mechanisms, data from several placebo-controlled trials shows that vitamin D provides benefit in a variety of infectious conditions including human immunodeficiency virus (HIV) [26], hepatitis C virus [27-29] and upper respiratory infections [30-31]. Vitamin D administration displays impressive clinical effectiveness against dermal HPV as shown in case reports, clinical series, and placebo-controlled trials, with remarkable safety, high efficacy, and a consistent trend toward complete resolution of lesions [32-36]. In 2014, Schulte-Uebbing et al [37] published “Chronic cervical infections and dysplasia (CIN I, CIN II): vaginal vitamin D (high dose) treatment” showing that among 200 women with cervical dysplasia, vitamin D vaginal suppositories (12,500 IU, 3 nights per week, for 6 weeks) provided “very good anti-inflammatory effects” and “good antidysplastic effects” in women with CIN 1. In 2017, Vahedpoor and colleagues [38] published “Effects of Long-Term Vitamin D Supplementation on Regression and Metabolic Status of Cervical Intraepithelial Neoplasia” in which they summarized, “In conclusion, vitamin D3 administration for 6 months among women with CIN1 resulted in its regression and had beneficial effects on markers of insulin metabolism, plasma NO, TAC, GSH and MDA levels.” In 2018, Vahedpoor and colleagues [39] published “Long-Term Vitamin D Supplementation and the Effects on Recurrence and Metabolic Status of Cervical Intraepithelial Neoplasia Grade 2 or 3” in which they noted, “The recurrence rate of CIN1/2/3 was 18.5 and 48.1% in the vitamin D and placebo groups respectively”, thereby clearly favoring treatment with vitamin D over placebo.



In Scotland, programs advocating HPV vaccination (started in 2008) and vitamin D supplementation (started not later than 2006 and again in 2009) occurred in close chronologic proximity; use of nutritional supplements that contain or potentiate vitamin D had started to increase in the population by 2003. Crediting the reduction in HPV-related disease solely to vaccination via retrospective population study is potentially misleading, especially when these authors make no account whatsoever of the national program for vitamin D supplementation which started in the same time-frame. Numerous studies have shown that vitamin D provides immunomodulatory, anti-inflammatory, microbiome-modifying, antiviral and anti-HPV benefits with high safety, good efficacy, low cost, wide availability, and clinically important collateral benefits.

Following the posting of my rapid response critiquing the editorial (11 Apr 2019), BMJ posted my resubmitted response rebutting the original research two days later (13 Apr 2019). Some but not all of the problems with the editorial are also noted in and originate from the primary research and therefore my critiques are similar, but not identical, with the second response a bit more refined and also with changes in a few citations. The major errors in the primary article are as follows: First, the study design of “retrospective population study” is incapable of determining causal relationships; at best such a study design can only determine temporal relationships, i.e., two events occurring together within the same time-period or one event following the other. As such, their reporting of any causal relationship is erroneous because this type of study cannot establish causality. Subsequently, the editorial and mass media derivatives are likewise erroneous. Second, attribution of effectiveness to the vaccine while ignoring any and all education surrounding the vaccine conflates inoculation with behavior-modifying education. Telling a young girl in essence that “the vaccination is directed toward a sexually transmitted infection in the form of a virus that could infect her vagina and cervix if she has unprotected sex with a boy” is a behavior-changing conversation likely to reduce sexual intercourse, with boys, especially without barrier protection; this primary study by Palmer and colleagues completely failed to account for any effect of education, instead giving all credit—indeed premature and inappropriate credit—to the vaccine. The age correlation that they reported—less HPV with earlier vaccination—could easily be explained or confounded with earlier education that changes sexual behavior. The authors failed to consider anything other than vaccination, so of course they found a correlation between vaccination and reduced HPV-related disorders. Third, the authors ascribe “herd immunity” to the observation that unvaccinated girls also showed a reduction in HPV-related disorders; but this could have easily and perhaps more convincingly been attributed to the nationwide vitamin D supplementation programs, which were complete-

ly ignored and never mentioned despite the fact that vitamin D has been proven effective against HPV infections via a variety of levels of evidence. Their concluding statement “The bivalent vaccine is confirmed as being highly effective vaccine and should greatly reduce the incidence of cervical cancer” is overzealous and is an epidemiologic error when they failed to consider any other interpretive options. Indeed, such considerations—controlling for other possible factors—is the defining characteristic of competent epidemiology. The authors followed their egregious overstatement (quoted previously) with a confirmatory understatement: “It is possible therefore that vaccine effectiveness was over-estimated.” Neither the accompanying editorial nor the publications for the mass media mention of the probable overestimation of vaccine effectiveness. My rapid response to the original article is as follows:

### **Scotland’s public health campaigns to improve vitamin D nutrition occurred within the same timeframe as HVP vaccination**

In April 2019, Palmer et al [1] published a retrospective population study crediting vaccination against human papilloma virus (HPV) with reduction in HPV prevalence in Scotland, and the authors attributed a reduction in HPV prevalence among unvaccinated women with “herd protection.” However, the authors did not mention Scotland’s population-wide public health campaigns to address endemic vitamin D deficiency. The Scottish Government recognized the high prevalence of vitamin D deficiency in its population and began recommending vitamin D supplementation not later than 2006. Vitamin D deficiency results in impaired mucosal and immune defenses and correlates in a dose-dependent manner with increased cervicovaginal HPV infection [2]. By 2009, coincident with the start of the HPV vaccination campaign in 2008, numerous vitamin D supplementation (and sun exposure) campaigns were being implemented throughout Scotland to combat the documented population-wide problem of vitamin D deficiency.

Our views of vitamin D experienced a paradigm shift in the early part of this century with landmark publications such as Vieth’s authoritative documentation of safety in 1999 [3], Zittermann’s “Vitamin D in preventive medicine” in British Journal of Nutrition in 2003 [4], and Vasquez’s “Clinical importance of vitamin D (cholecalciferol): a paradigm shift with implications for all healthcare providers” in 2004 [5] followed by an important partial summary of vitamin D usage guidelines in British Medical Journal in 2005 [6]. These and similarly themed articles have contributed to increased awareness of vitamin D’s safety and roles in preventive medicine and public health, including reducing the burden of infectious diseases such as viral

infections and various types of cancer. Consistent with this evidence of safety and benefit, along with evidence that the human daily requirement is an order of magnitude greater than previously believed [7], use of vitamin D supplementation began to increase slowly and then exponentially in the United States [8] and other countries, especially English-speaking societies, most notably the United Kingdom. Indeed, according to the Scottish Health Survey 2003 [9], use of dietary supplements such as vitamins (including vitamin D), fish oils (a source of vitamin D) and minerals (magnesium supplementation improves vitamin D status and is necessary for vitamin D activation, binding, transport, metabolism, and gene expression [10]) had already begun to increase between 1998 and 2003. Certainly not later than 2006, the Scottish Government was already recommending widespread use of vitamin D supplements to combat the high prevalence of vitamin D deficiency in Scotland [11].

Widespread vitamin D deficiency in Scotland was followed by widespread recommendations for vitamin D supplementation starting in 2006 and 2009. In 2006, Burleigh and Potter published in *Scottish Medical Journal* [12] stating that, "The prevalence of vitamin D deficiency is high in older outpatients in this geographical area." In 2007, Hyppönen and Power [13] showed that among British adults "Prevalence of hypovitaminosis D in the general population was alarmingly high during the winter and spring, which warrants action at a population level rather than at a risk group level." In 2008, Rhein [14] further specified that "Vitamin D deficiency is widespread in Scotland." In 2009, the Scottish Government acknowledged the need to educate its population about the importance of vitamin D3 supplementation [15]. From that time until the present, the Scottish Government, United Kingdom National Health Services, and various advocacy groups and programs (e.g., ScotsNeedVitaminD.com[16], Healthy Start, which provides vitamin D supplements to all children and pregnant women in Scotland [17]) continue assertive public health campaigns recommending vitamin D supplementation and increased vitamin D production via sun exposure via the "Shine on Scotland" program initiated in 2009 [18] for all of its citizens [19-23].

Vitamin D supplementation has been the subject of many clinical trials documenting anti-inflammatory, antiviral, and anticancer benefits. Correction of vitamin D deficiency has significant anti-inflammatory [24] and immunomodulatory [25] benefits. Vitamin D and its direct metabolites promote production of antimicrobial peptides which have antibacterial and antiviral properties, while also reducing viral replication by inhibiting the NF-kappaB pathway. Consistent with these immunomodulatory and

antiviral mechanisms, data from several placebo-controlled trials shows that vitamin D provides benefit in a variety of infectious conditions including human immunodeficiency virus (HIV) [26], hepatitis C virus [27-29] and upper respiratory infections [30-31]. Vitamin D administration displays impressive clinical effectiveness against dermal HPV as shown in case reports, clinical series, and placebo-controlled trials, with remarkable safety, high efficacy, and a consistent trend toward complete resolution of lesions [32-36]. In 2014, Schulte-Uebbing et al [37] published "Chronic cervical infections and dysplasia (cervical intraepithelial neoplasia [CIN] 1-2): vaginal vitamin D treatment" showing that among 200 women with cervical dysplasia, vitamin D vaginal suppositories (12,500 IU, 3 nights per week, for 6 weeks) provided "very good anti-inflammatory effects" and "good antidysplastic effects" in women with CIN 1. In 2017, Vahedpoor and colleagues [38] published a double-blind placebo-controlled trial of vitamin D in women with HPV, in which they found that vitamin D3 administration for 6 months among women with CIN1 resulted in its regression and had beneficial effects on markers of insulin metabolism and antioxidant status. In 2018, Vahedpoor and colleagues [39] published a double-blind placebo-controlled trial of vitamin D in women with HPV, in which they observed, "The recurrence rate of CIN1/2/3 was 18.5 and 48.1% in the vitamin D and placebo groups respectively", thereby clearly favoring treatment with vitamin D over placebo.

In Scotland, programs advocating HPV vaccination (started in 2008) and vitamin D supplementation (started not later than 2006 and again in 2009) occurred in close chronologic proximity. Crediting the reduction in HPV-related disease solely to vaccination via retrospective population study is potentially invalid and misleading, especially when the authors make no account whatsoever of the national program for vitamin D supplementation which started in the same timeframe. Numerous studies have shown that vitamin D provides immunomodulatory, anti-inflammatory, microbiome-modifying, antiviral and anti-HPV benefits with high safety, good efficacy, low cost, wide availability, and clinically important collateral benefits.

My reply makes quite obvious the shortcomings of their biased research publication. One should reasonably wonder why the *BMJ* would publish such a flawed report, and then pay for a "commissioned" "editorial" which was "not peer-reviewed." Then, the editors collectively stifled any further conversation regarding the antiviral action of vitamin D delivered to the same population in the same time-frame, despite its proof of clinical effectiveness. Such a compilation of errors could hardly seem accidental, although they would synergize fantastically for promoting sales and government mandates of the HPV vaccine.



**And now for the silent treatment from BMJ editors:** Reasonably anticipating that the BMJ would share my well-cited concerns with their readership via publication in a Letter to the Editor or Reply, I waited to hear from the Editors. When no response arrived by several weeks later, I emailed the Letters Editor and the Editor in Chief along with two other associate editors. The probability of none of them receiving my email nor noting my two posted rapid replies is essentially zero, and they have offered no response nor explanation for why their publications omitted this key data.

From: Dr Alex Vasquez  
Date: Thu, May 9, 2019 at 4:34 PM  
Subject: Re: Letters timeframe  
To: Davies  
Cc: Doshi, Godlee, Ludwig

Thank you for your earlier replies. I am following-up with interest in publishing the concerns raised in my rapid responses, because the original research appears to have looked at a chronological correlation without looking at the national health campaigns that started in the same time-frame. In particular, the public health campaign that I detailed has double-blind placebo-controlled evidence of clinical effectiveness, so it is worthy of consideration.

Of the two rapid responses posted (thank you), the second is a bit more refined and has (a few) better citations (I think I changed 2 of them).

1. Scotland's public health programs and trends improving nutritional status should be considered when discussing HPV trends <https://www.bmj.com/content/365/bmj.l1375/rr-4>

2. Scotland's public health campaigns to improve vitamin D nutrition occurred within the same timeframe as HPV vaccination <https://www.bmj.com/content/365/bmj.l1161/rr-8>

As noted in my responses, vitamin D demonstrates anti-inflammatory, microbiome-modifying, immune-supporting (eg, antimicrobial peptides, sIgA) and it specifically demonstrates effectiveness against HPV. I trust that we share the same goal of helping patients avoid HPV-related disorders, and cholecalciferol clearly shows benefit, safety, wide availability, and low cost.

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Thank you,  
Dr Alex Vasquez

Again expecting the journal's editors might value research accuracy, journalistic integrity, and the importance of ethical standards in clinical care and research, I was a bit surprised that these five BMJ Editors would collectively fail to reply to cited concerns about the quality of their publication. BMJ claims on its website that it hosts and/or represents an "international community of readers, authors, and editors" but apparently this sense of "community" does not apply to the questioning of publications that show obvious bias by ignoring other influences and funneling the results toward vaccine endorsement.

**Basic components of research integrity:** Tutorial articles published in journals as well as textbooks such as *The Lancet Handbook of Essential Concepts in Clinical Research*<sup>11</sup> can inform the implementation and evaluation of research. Ideally (but largely theoretically), research is performed honestly and competently, critically reviewed postproduction and prepublication by independent scientists/scholars, and then refereed by at least one expert-level Editor prior to publication and dissemination; the fourth component of research integrity is post-publication critique by readers and correspondence between such readers and the original authors. A fifth component of research integrity is the publication of article-specific editorials/commentaries that provide context and perspective for the new information presented; as with the original research, such Editorials should be independently peer-reviewed in a blinded manner by internal or external reviewers prior to publication.

**Authorial and editorial bypassing of research integrity:** A notorious pitfall in the publication of descriptive and retrospective studies such as the one by Palmer et al being discussed here is that of false attribution; that is, the erroneous assumption that because an intervention was followed by an observation that the former caused the latter. This error is intellectually grave as it can lead to erroneous conclusions about cause-and-effect relationships, thereby misleading government policy and clinical care. This error is also described as overstepping the data, erroneous inference, and—in Latin—post hoc ergo propter hoc which translates to “after this, therefore because of this”, also known as the post hoc fallacy. In truth, causal relationships can only be established in appropriately conducted clinical trials; non-interventional retrospective population studies such as this one led by Palmer can add only accessory information but are incapable of establishing or refuting causality, especially when the study itself fails to control for other variables and considerations.

“Errors” in study design may be accidental or intentional. In addition to the failure to consider other causes for an observed outcome, investigators can also accidentally or intentionally “stack the deck” in order to make a certain conclusion more or less likely. Strategically or innocently, researchers can select patients that may have covariables that are of major importance to the outcome being studied. Indeed, the authors noted that “partial immunization was associated with increased deprivation, having left school, and increasing age” but they failed to follow-up on these considerations and their HPV-relevant implications. Co-variables that correlate with more vaccination are better financial status, better healthcare insurance coverage, better nutrition, less sexual promiscuity and less social inequality/defeat stress. Improved nutrition obviously provides an anti-viral effect by reducing inflammation-promoted viral replication and also by enhancing immune defenses; wealthier and better

educated persons are known to consume more nutritional supplements. A reduced number of sexual exposures would obviously affect the prevalence of a sexually transmitted diseases (STD). Less socioeconomic stress would lead to a relative improvement in immune function compared to a group with stress-induced immunodysfunction and immunosuppression. Obviously—and completely ignored by all of the authors and editors of this BMJ publication—is the fact that the act of vaccination itself with its attendant information (ie, behavior-changing education) regarding the risks of sexual behavior (ie, promiscuity verses abstinence) and the value of STD-blocking barrier methods (e.g., condoms) would be clearly expected to reduce HPV-related disease. As noted in *The Lancet Handbook of Essential Concepts in Clinical Research* (page 35), “When selection bias or information bias exists in a study, irreparable damage results. Internal validity is doomed.” Also (page 46), “Although assessment of many outcomes is often cited as a positive attribute of cohort studies, this feature can be abused. For example, testing the associations between exposure and many outcomes, but only reporting the significant ones, represents misleading science.”

In this case, the authors quite obviously failed to consider anything other than their chosen vaccine program, and then they assumed that the vaccine program was responsible for the observation that cervical disease was decreased in the vaccinated group. How these researchers were able to remain ignorant of a well-publicized government-endorsed nationwide public health campaign emphasizing improved nutrition and vitamin D supplementation<sup>12</sup> (which is proven with a variety of clinical research to reduce the burden of HPV infections, to improve general immunity, and to reduce inflammation) is unclear; one can only reasonably speculate why the journal’s editors would fail to publish commentary and consideration in this regard.

Bizarrely, BMJ allowed the study’s lead author to post additional commentary on his own research, as if the publication needed any additional biased aggrandizement. Not surprisingly, Palmer<sup>13</sup> agreed with his own perspective and endorsed the greatness of his research, stating that his research revealed “a veritable triumph for medicine” and that the intervention he endorses is “the only feasible solution” to preventing HPV-related cervical cancer. As would be expected in one of the “mainstream medical journals”, zero mention was made of nutritional immunorestitution, microbiome modification, nor antiviral nutrition strategies—all of which have a clear role in the prevention of HPV-related cervical disease. Clearly, if the only intervention considered is vaccination, and all other social and biological interventions are ignored, then the only possible solution will appear to be vaccination, regardless of the lack of merit of this conclusion. Whether or not one “believes in” the common oversimplified model of HPV-induced cervical disease and/or the promul-



gated “value” of vaccination, we should all want the research to be accurate and for all variables and treatment options to be considered for this condition, especially when the promoted vaccine appears responsible for a large number of injuries and deaths.<sup>14</sup> As noted recently (2018) by former BMJ Editor Richard Smith, the BMJ and its publishing group sells millions of dollars/pounds/euros worth of “product advertising” (e.g., £2.7m) and article reprints (£1.98m or \$2,497,770 United States dollars); most of these advertisements and article preprints are purchased by the medical device and drug (including vaccine) industry to promote sales of their products.<sup>15</sup>

**The case for postpublication retraction:** According to the Committee on Publication Ethics,<sup>16</sup> journal editors should strongly consider retracting a publication if any of the following occur: 1) evidence that the findings are unreliable, either as a result of misconduct [e.g. data fabrication] or honest error [e.g. miscalculation or experimental error], 2) redundant publication, 3) plagiarism, 4) unethical research. In my opinion, any legitimate critical reading of this article would have easily led to its pre-publication rejection or its post-publication retraction, but because the article has financial value by promoting a multibillion dollar vaccine paradigm and up to thousands/millions of dollars in article reprints and pharmaceutical advertising, it was published, editorially praised, and then publicly glorified without (to my knowledge) any scientific criticism. In the irony of ironies, lead author Palmer was quoted by Medscape (op cit) as stating: “One of the things this study really does hammer home is that the anti-vaccine lobby are actually peddling falsehoods.”

**The importance of nutritional expertise and independent publications in the post-truth and pro-pharmaceutical era:** The international community has been living in the post-truth era—defined as being dominated by utter disregard for truth in the service of financial and political power—now for many years.<sup>17</sup> Given that nutritional education is generally excluded from medical education and post-graduate training, the only way for clinicians to learn about the clinical use of vitamins and minerals to prevent and treat a wide range of diseases—including but not limited to HPV-related diseases—is to access independent publications such as *Journal of Orthomolecular Medicine*,<sup>18</sup> expert-level textbooks,<sup>19</sup> nutrition-inclusive conferences and online courses. A clinician will likely never learn that HPV diseases can be prevented and treated by nutritional interventions by reading and following the mainstream medical journals and mass media. But from the orthomolecular perspective, the rationale supporting such interventions is quite obvious and strongly grounded in legitimate science, biological plausibility, and clinical trials (e.g., antiviral nutrition strategies).<sup>20</sup>

**Author information:** Dr Alex Vasquez is a lecturer and author of numerous articles, letters, and books related to

topics of nutrition, clinical medicine, neuroinflammation, human microbiome and immunonutrition. Dr Vasquez has served as a consultant to Biotics Research Corporation. Dr Vasquez has archived the PDF versions of the herein-discussed rapid replies in free-access depositories, specifically <https://ichnfm.academia.edu/AlexVasquez> and [https://www.researchgate.net/profile/Alex\\_Vasquez2](https://www.researchgate.net/profile/Alex_Vasquez2).

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# INTERNATIONAL JOURNAL OF HUMAN NUTRITION AND FUNCTIONAL MEDICINE

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# Pharma Echo Chamber, Sociopolitical Matrix, and Power Vortex: A Diagram-Centric Conceptualization

Alex Vasquez DO ND DC FACN

## Current Status of Vortex Diagram and Descriptions

Due to escalating political misbehavior in March 2019, the main diagram has been updated and is now being further developed and more widely distributed. This version was updated on March 3, 2019, and updated versions will be periodically uploaded to the archival website: <https://www.academia.edu/38476348>

## Previous versions

1. This diagram originated spontaneously during the production of a review—titled “Introduction to #Cardionutrition: Kidney Stones and the Ketogenic Diet”—published in [video](#) and [text format](#) in 2018.
2. The diagram was again published with additional explanation in a peer-reviewed editorial published in 2019: [Vasquez A, Pizzorno J. Concerns About The Integrity of The Scientific Research Process—Focus On Recent Negative Publications Regarding Nutrition, Multivitamins, Fish Oil And Cardiovascular Disease. Integrative Medicine 2019 Feb; 8-15](#)

## Commentary

The recent censorship of information that has occurred—originating from the United States but also influencing access to information worldwide—requires commentary, context and concrete documentation of its existence. **Perhaps the most important contribution of this article is the demonstration of the interconnectedness of the systems that originate and sustain thought-control and intellectual censorship in what otherwise might appear to be democratic societies.** This article contends that information requires context and that while isolated facts may be very important by themselves they cannot be more important or influential than their overall context and the resulting synergistic-exponential influence they produce; furthermore, the appreciation of these components that occur over time establishes that these events are systematic and coordinated rather than incidental and isolated.

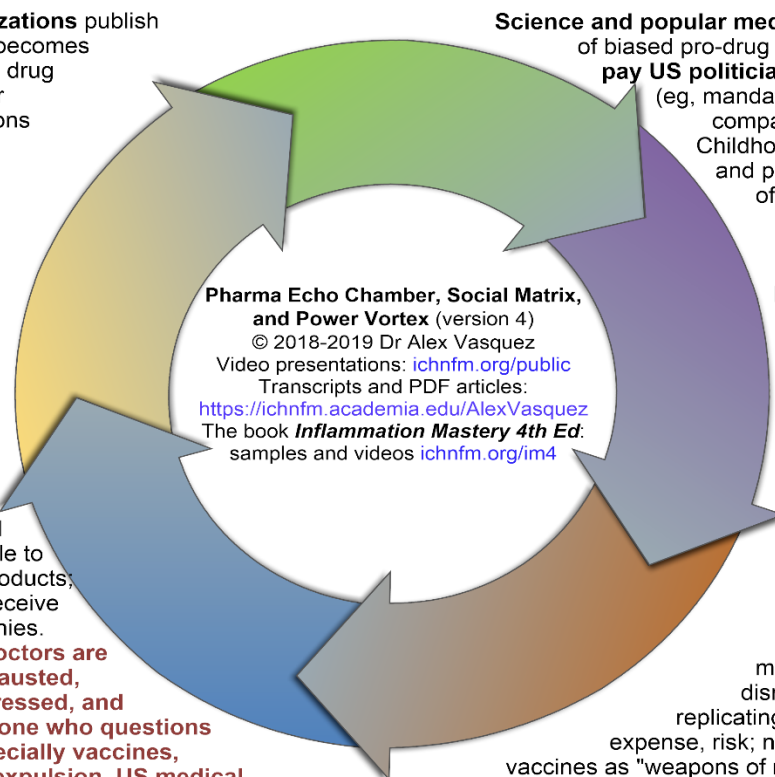
## Data and Citations

1. **Medical journals are inherently biased toward publishing drug-praising articles that can also serve as advertisements and infomercials for the pharmaceutical industry, which commonly pays millions of dollars for journal reprints:** Medical journals/organizations publish pro-drug research which becomes paid advertising when the drug companies buy reprints or direct advertising for millions of dollars ([Smith, PLOS Medicine 2005](#)).
2. **Headline-making newspapers, magazines, and television programs re-publish pro-drug information to the delight of their drug advertisers:** Positive news about drugs and vaccines is headlined and featured, while actionable information about nutrition is unavailable or tainted with controversy. Medicine-positive television features "medical heroes" reinforcing medical authority, medical dependency, and the drugs-as-salvation paradigms. News stories highlighting fear of infectious diseases serve to maintain constant fear, medical dependency, and xenophobia (e.g., "Africanized" bees, Zika, El Niño, Asian flu, [Xenophobia: Ebola Stigma, Discrimination for Africans. Time Magazine 2014](#)). Many of these stories are revealed as lies after they have served their political purposes; [PolitiFact named the panicked US response to Ebola as the 2014 "Lie of the Year", Time Magazine 2014](#).
3. **Science and popular media become an echo chamber of biased pro-drug propaganda;** drug companies pay US politicians to promote pro-drug laws (e.g., mandatory vaccinations), protect drug companies from liability (e.g., National Childhood Vaccine Injury Act of 1986), and promote international expansion of US drug sales. US politicians gag and censor free speech on topics related to medical dangers by pressuring bookstores and social media to burn books and ban documentary films. [Documentary and case report films of vaccine-induced injury and death are labeled “anti-vaccine movies” and are disappeared from bookstores and](#)

Headline-making newspapers, magazines, and television programs re-publish pro-drug information to the delight of their drug advertisers. Positive news about drugs and vaccines is headlined and featured, while actionable information about nutrition is unavailable or tainted with controversy. Medicine-positive television features "medical heroes" reinforcing medical authority, medical dependency, and the drugs-as-salvation paradigms. News stories highlighting fear of infectious diseases serve to maintain constant fear, medical dependency, and xenophobia (eg, "Africanized" bees, Zika, El Niño, Asian flu, [Xenophobia: Ebola Stigma, Discrimination for Africans Associated with Disease](#). *Time Magazine* October 29, 2014). Many of these stories are revealed as lies after they have served their political purposes; *PolitiFact* named the panicked US response to Ebola as the 2014 "Lie of the Year", *Time Magazine* Dec 15, 2014

Medical journals/organizations publish pro-drug research which becomes paid advertising when the drug companies buy reprints or direct advertising for millions of dollars ([Smith, \*PLOS Medicine\* 2005](#))

Drug companies infiltrate media, television shows, education, and public policy. Defunding public science forces schools and journals to rely on pharma funding. Drug companies pay "researchers", professors, and editors to publish and teach information favorable to the drug paradigm and products; medical schools love to receive funding from drug companies. **Medical students and doctors are kept insanely busy, exhausted, suicidally depressed/stressed, and fearfully compliant; anyone who questions the drug paradigm, especially vaccines, is a target for censure, expulsion. US medical physicians have the highest rates of suicide. Physicians Experience Highest Suicide Rate of Any Profession.** *Medscape* May 07, 2018



Science and popular media become an echo chamber of biased pro-drug propaganda; drug companies pay US politicians to promote pro-drug laws (eg, mandatory vaccinations), protect drug companies from liability (eg, National Childhood Vaccine Injury Act of 1986), and promote international expansion of US drugs. US politicians gag and censure free speech on topics related to medical dangers by pressuring bookstores and social media to burn books and ban documentary films. Anti-vaccine movies disappear from Amazon after CNN Business report. *CNN Business*, March 1, 2019 Drug companies become more profitable and therefore more powerful than governments. Drug companies utilize US political and military power by influencing international trade agreements, eg, enforcing mandatory drug/vaccine policies, dismantling consumer protections, replicating US's healthcare bureaucracy, expense, risk; note the Orwellian description of vaccines as "weapons of mass protection" ([Milstien et al, \*Health Affairs\* 2006](#)) and the deployment of military forces under the banner of humanitarian health aid ([National armies for global health? \*Lancet\* 2014 Oct 25](#))\*

\*Notice the language of such "free trade" agreements, "seek the elimination of government measures such as price controls and reference pricing which deny full market access for United States products in overseas markets... legalizing direct to consumer advertising (DTCA) via the internet: Each Party shall permit a pharmaceutical manufacturer to disseminate... information regarding its pharmaceuticals that are approved for sale in the Party's territory..." [Lopert R, Gleeson D. The High Price of "Free" Trade: U.S. Trade Agreements and Access to Medicines. \*Journal of Law, Medicine & Ethics\* 2013 Apr, 199-223.](#) "The United State seeks to redesign national health care systems in its own image... By concluding bilateral and regional agreements, the United States is gaining greater influence over the domestic health care and drug coverage programs of its trading partners... The U.S. (and Australian) pharmaceutical industry perceived a free trade agreement to present an opportunity to undermine the evidence-based, strict and effective procedures underpinning Australia's Pharmaceutical Benefits Scheme (PBS)... After the treaty's conclusion, however, drug manufacturers expressed delight with the implications for prices, profits and investment... Free trade agreements reflect the U.S.' enduring adherence to market-based solutions, coupled with a conviction that government intervention is unnecessary and unhelpful. Thus the U.S. Trade Representative is mandated to pursue "the elimination of government measures such as price controls and reference pricing which deny full market access for United States products" in overseas markets. This is despite the U.S. health care system itself exhibiting the characteristics of market failure... enabling triple damages for patent violations... The United States deploys an aggressive trade agenda to expand markets for U.S. goods and services " [Tully SR. Free Trade Agreements With The United States: 8 Lessons For Prospective Parties From Australia's Experience. \*British Journal of American Legal Studies\* 2016 Dec, 395-418.](#) "There is growing international concern about the risks posed by direct-to-consumer advertising (DTCA) of prescription pharmaceuticals, including via the internet. Recent trade agreements negotiated by the United States, however, incorporate provisions that may constrain national regulation of DTCA. Some provisions explicitly mention DTCA; others enable foreign investors to seek compensation if new regulations are seen to harm their investments." [Gleeson D, Menkes DB. Trade Agreements and Direct-to-Consumer Advertising of Pharmaceuticals. \*International Journal of Health Policy and Management\* 2013 Feb, 98-100.](#) "Opposition to Breast-Feeding Resolution by U.S. Stuns World Health Officials. When that failed, they turned to threats, according to diplomats and government officials who took part in the discussions. Ecuador, which had planned to introduce the measure, was the first to find itself in the cross hairs. The Americans were blunt: If Ecuador refused to drop the resolution, Washington would unleash punishing trade measures and withdraw crucial military aid. The Ecuadorean government quickly acquiesced." [New York Times July 8, 2018](#) "Trump Stance on Breast-Feeding and Formula Criticized by Medical Experts: Global health experts say breast milk is especially important for babies in poor countries, where unsafe water supplies can make powdered infant formula dangerous. The Trump administration's aggressive attempts to water down an international resolution supporting breast-feeding go against decades of advice by most medical organizations and public health experts." [New York Times July 9, 2018](#)



media outlets. ([CNN Business 2019](#)). This government-representative-directed action must be noted as a violation of the First Amendment of the United States Constitution that explicitly protects “free speech” among American citizens; in the 2019 situation, the books and documentary films were effectively banned from public access when a US politician sent a “warning letter” to various social media platforms and media retailers, thereby using government influence to restrict privately-distributed access to information. U.S. Constitution, First Amendment: "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or **abridging the freedom of speech, or of the press**; or the right of the people peaceably to assemble, and to petition the government for a redress of grievances."

4. **Drug companies become more profitable and therefore more powerful than governments.** Drug companies utilize US political and military power by influencing international trade agreements, eg, enforcing mandatory drug/vaccine policies, dismantling consumer protections, replicating US's healthcare bureaucracy, expense, risk; note the Orwellian description of vaccines as "weapons of mass protection" ([Milstien et al, Health Affairs 2006](#)) and the deployment of military forces under the banner of humanitarian health aid ([National armies for global health? Lancet 2014](#))
5. **Drug companies infiltrate media, television shows, education, and public policy.** Defunding public science forces schools and journals to rely on pharma funding. Drug companies pay "researchers", professors, and editors to publish and teach information favorable to the drug paradigm and products; medical schools love to receive funding from drug companies. Medical students and doctors are kept insanely busy, exhausted, suicidally depressed/stressed, and fearfully compliant; anyone who questions the drug paradigm, especially vaccines, is a target for censure, expulsion. US medical physicians have the highest rates of suicide of any profession. ([Physicians Experience Highest Suicide Rate of Any Profession. Medscape 2018](#))
6. **International political agreements are written to the favor of drug companies rather than to the citizens of those countries:** Notice the language of such "free trade" agreements, "seek the elimination of government measures such as price controls and reference pricing which deny full market access for United States products in overseas markets... legalizing direct to consumer advertising (DTCA) via the internet: Each Party shall permit a pharmaceutical manufacturer to disseminate... information regarding its pharmaceuticals that are approved for sale in the Party's territory..." [Lopert R, Gleeson D. The High](#)

[Price of “Free” Trade: U.S. Trade Agreements and Access to Medicines. Journal of Law, Medicine & Ethics 2013.](#) "The United State seeks to redesign national health care systems in its own image... By concluding bilateral and regional agreements, the United States is gaining greater influence over the domestic health care and drug coverage programs of its trading partners... The U.S. (and Australian) pharmaceutical industry perceived a free trade agreement to present an opportunity to undermine the evidence-based, strict and effective procedures underpinning Australia's Pharmaceutical Benefits Scheme (PBS)... After the treaty's conclusion, however, drug manufacturers expressed delight with the implications for prices, profits and investment... Free trade agreements reflect the U.S.' enduring adherence to market-based solutions, coupled with a conviction that government intervention is unnecessary and unhelpful. Thus the U.S. Trade Representative is mandated to pursue “the elimination of government measures such as price controls and reference pricing which deny full market access for United States products” in overseas markets. This is despite the U.S. health care system itself exhibiting the characteristics of market failure... enabling triple damages for patent violations... The United States deploys an aggressive trade agenda to expand markets for U.S. goods and services " [Tully SR. Free Trade Agreements with The United States: 8 Lessons For Prospective Parties From Australia's Experience. British Journal of American Legal Studies 2016.](#) "There is growing international concern about the risks posed by direct-to-consumer advertising (DTCA) of prescription pharmaceuticals, including via the internet. Recent trade agreements negotiated by the United States, however, incorporate provisions that may constrain national regulation of DTCA. Some provisions explicitly mention DTCA; others enable foreign investors to seek compensation if new regulations are seen to harm their investments." [Gleeson D, Menkes DB. Trade Agreements and Direct-to-Consumer Advertising of Pharmaceuticals. International Journal of Health Policy and Management 2013.](#) "Opposition to Breast-Feeding Resolution by U.S. Stuns World Health Officials. ... When that failed, they turned to threats, according to diplomats and government officials who took part in the discussions. Ecuador, which had planned to introduce the measure, was the first to find itself in the cross hairs. The Americans were blunt: If Ecuador refused to drop the resolution, Washington would unleash punishing trade measures and withdraw crucial **military** aid. The Ecuadorean government quickly acquiesced." [Opposition to Breast-Feeding Resolution by U.S. Stuns World Health Officials. New York Times 2018](#) "Global health experts say breast

milk is especially important for babies in poor countries, where unsafe water supplies can make powdered infant formula dangerous. The Trump administration's aggressive attempts to water down an international resolution supporting breast-feeding go against decades of advice by most medical organizations and public health experts." [Trump Stance on Breast-Feeding and Formula Criticized by Medical Experts. \*New York Times\* July 9, 2018](#)

### Current status of Vortex Diagram

This article is currently being updated, cited and substantiated. This version was updated on March 3, 2019, and upcoming versions will be uploaded to the archival website: <https://www.academia.edu/38476348>



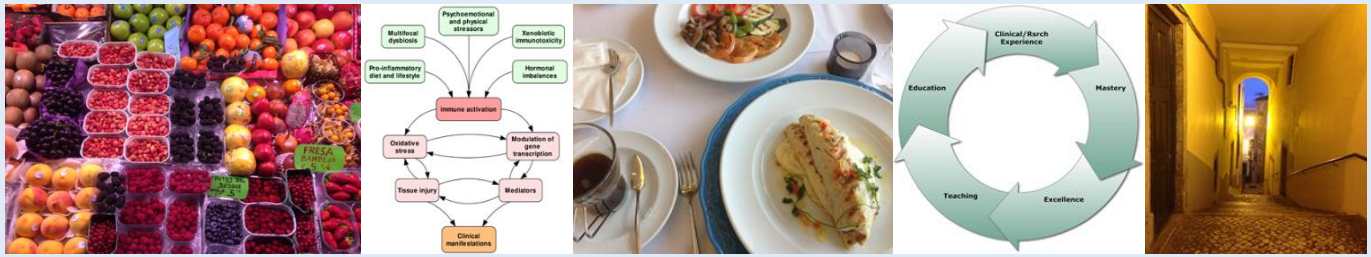
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**About the author and presenter: Alex Kennerly Vasquez DO ND DC (USA), Fellow of the American College of Nutrition (FACN), Overseas Fellow of the Royal Society of Medicine:** An award-winning clinician-scholar and founding Program Director of the world's first fully-accredited university-based graduate program in Human Nutrition and Functional Medicine, Dr Alex Vasquez is recognized internationally for his high intellectual and academic standards and for his expertise spanning and interconnecting many topics in medicine and nutrition. Dr Vasquez holds three doctoral degrees as a graduate of University of Western States (Doctor of Chiropractic, 1996), Bastyr University (Doctor of Naturopathic Medicine, 1999), and University of North Texas Health Science Center, Texas College of Osteopathic Medicine (Doctor of Osteopathic Medicine, 2010). Dr Vasquez has completed hundreds of hours of post-graduate and continuing education in subjects including Obstetrics, Pediatrics, Basic and Advanced Disaster Life Support, Nutrition and Functional Medicine; while in the final year of medical school, Dr Vasquez completed a Pre-Doctoral Research



Fellowship in Complementary and Alternative Medicine Research hosted by the US National Institutes of Health (NIH). Dr Vasquez is the author of many textbooks, including [Integrative Orthopedics](#) (2004, 2007 2012), [Functional Medicine Rheumatology](#) (Third Edition, 2014), [Musculoskeletal Pain: Expanded Clinical Strategies](#) (commissioned and published by Institute for Functional Medicine, 2008), [Chiropractic and Naturopathic Mastery of Common Clinical Disorders](#) (2009), [Integrative Medicine and Functional Medicine for Chronic Hypertension](#) (2011), [Brain Inflammation in Migraine and Fibromyalgia](#) (2016), [Mitochondrial Nutrition and Endoplasmic Reticulum Stress in Primary Care, 2<sup>nd</sup> Edition](#) (2014), [Antiviral Strategies and Immune Nutrition](#) (2014), [Mastering mTOR](#) (2015), [Autism, Dysbiosis, and the Gut-Brain Axis](#) (2017) and the 1200-page [Inflammation Mastery 4<sup>th</sup> Edition](#) (2016) also published as a two-volume set titled [Textbook of Clinical Nutrition and Functional Medicine](#). "DrV" has also written approximately 100 letters and articles for professional magazines and medical journals such as *TheLancet.com*, *British Medical Journal* (BMJ), *Annals of Pharmacotherapy*, *Nutritional Perspectives*, *Journal of Manipulative and Physiological Therapeutics* (JMPT), *Journal of the American Medical Association* (JAMA), *Original Internist*, *Integrative Medicine*, *Holistic Primary Care*, *Alternative Therapies in Health and Medicine*, *Journal of the American Osteopathic Association* (JAOA), *Dynamic Chiropractic*, *Journal of Clinical Endocrinology and Metabolism*, *Current Asthma and Allergy Reports*, *Complementary Therapies in Clinical Practice*, *Nature Reviews Rheumatology*, *Annals of the New York Academy of Sciences*, and *Arthritis & Rheumatism*, the Official Journal of the American College of Rheumatology. Dr Vasquez lectures internationally to healthcare professionals and has a consulting practice and service for doctors and patients. DrV has served as a consultant, product designer, writer and lecturer for Biotics Research Corporation since 2004. Having served on the Review Boards for *Journal of Pain Research*, *Autoimmune Diseases*, *PLOS One*, *Alternative Therapies in Health and Medicine*, *Neuropeptides*, *International Journal of Clinical Medicine*, *Journal of Inflammation Research*, *BMC Complementary and Alternative Medicine* (all PubMed/Medline indexed), *Integrated Blood Pressure Control*, *Journal of Biological Physics and Chemistry*, and *Journal of Naturopathic Medicine* and as the founding Editor of *Naturopathy Digest*, Dr Vasquez is currently the [Editor \(2013-\)](#) of [International Journal of Human Nutrition and Functional Medicine](#) and [Editor \(2018-present\)](#) of [Journal of Orthomolecular Medicine](#), published for more than 50 consecutive years by the International Society for Orthomolecular Medicine.



**International Journal of Human Nutrition and Functional Medicine** is a peer-reviewed evidence-based clinically-oriented publication produced quarterly with periodic special releases in print and/or digital formats (per author request/permission and Editor judgment), available as pay-per-issue, free/open access, or as a membership benefit (included or discounted), in English and/or other languages. As the title of the journal indicates, the focus of the journal is **human nutrition** (i.e., we publish only human-referent information, not animal studies; however, we will publish *translational summaries* of new animal research) and **functional medicine**, a broad clinical and conceptual discipline that seeks to protect, restore, and optimize human health by appreciating human physiology's systems biology construct and thus the necessity of addressing the totality of factors that influence health and disease outcomes in the *psyche* and *soma* of individual patients as well as the social *corpus* of local and international groups of persons. The journal is dynamic and adaptive; updated information about the journal is available on-line at the website [www.IntJHumNutrFunctMed.org](http://www.IntJHumNutrFunctMed.org). **Statement of Social Responsibility:** Due to the recent mis-use of science and the misuse of prominent positions to misdirect public opinion away from science and logic, ICHNFM has found necessity in forming a statement of social responsibility. ICHNFM requires—starting in 2015—that educational materials be socially contextualized with a humanistic emphasis; humanism is a philosophical and ethical stance that emphasizes the value and agency of human beings, individually and collectively, and requires critical thinking and evidence (rationalism, empiricism). In direct opposition to any notion that science and intellectual work are and should be separate from the goal of benefiting human life (ie, financial profiteering, or political misuse of science), we affirm that work in the sciences, healthcare, and medicine should hold preeminent the goal of providing benefit to humanity at large and not private or political interests, in particular what we have defined as the goals of healthcare: physical health and psychosocial freedom, both of which are required for the optimization of human potential and human culture. Likewise, faculty members and teaching staff are required to model beneficence, nonmaleficence, ethics, and justice; repeated violations of these ethical considerations will result first in conversation and if not resolved will result in termination of any working relationship because ICHNFM will maintain its ethics and integrity and will not be tainted by affiliation with faculty or presenters who are socially reckless or maleficent, regardless of the scale or medium (ie, including private emails and public/social conversations and comments). ICHNFM will maintain the highest standards of science, clinical applicability, ethics, and social effect/influence/beneficence.

**Notable publications in 2014**—① Lab Fraud in Functional Medicine, ② ISIFMC Position on HPS2-THRIVE; ③ Unified Antiviral Strategy, ④ Metabolic Correction: [www.ichnfm.org/journal](http://www.ichnfm.org/journal)

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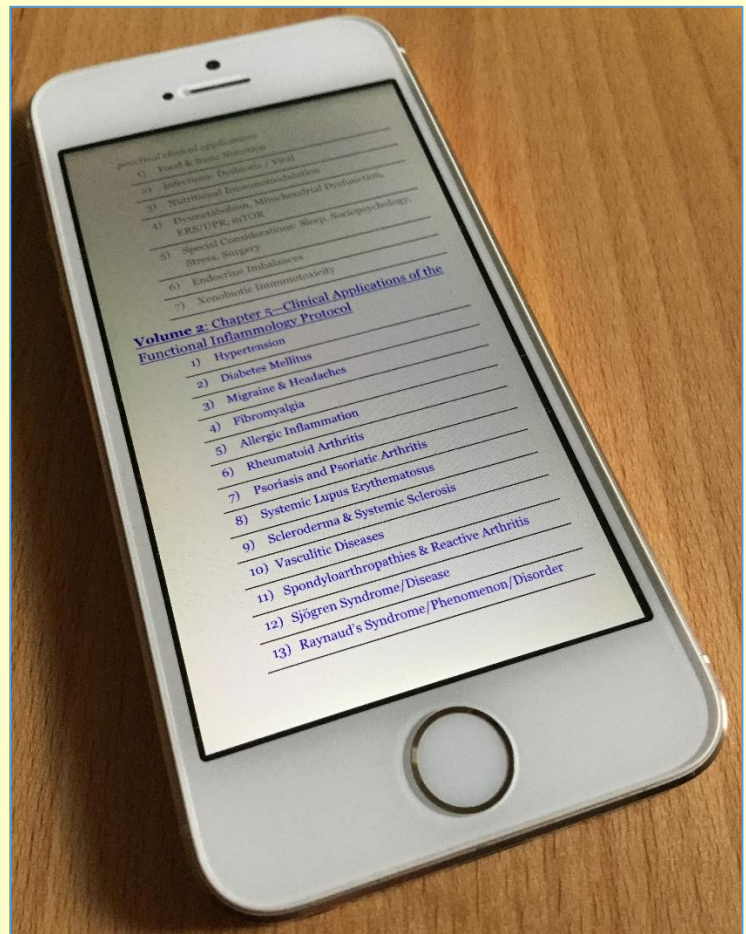
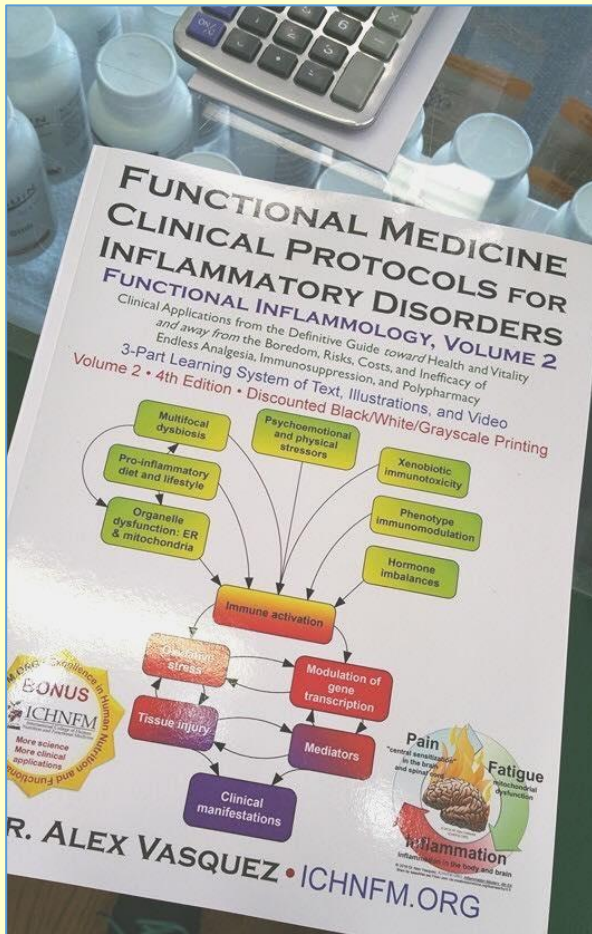
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*Additional articles and book excerpts have been amended to the previous publication in order to provide context and orientation to the author's main works.*

### **BOOK EXCERPTS, CHAPTERS:**

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- Main: <https://www.ichnfm.org/> This is actually a very rich website with many blogs and videos
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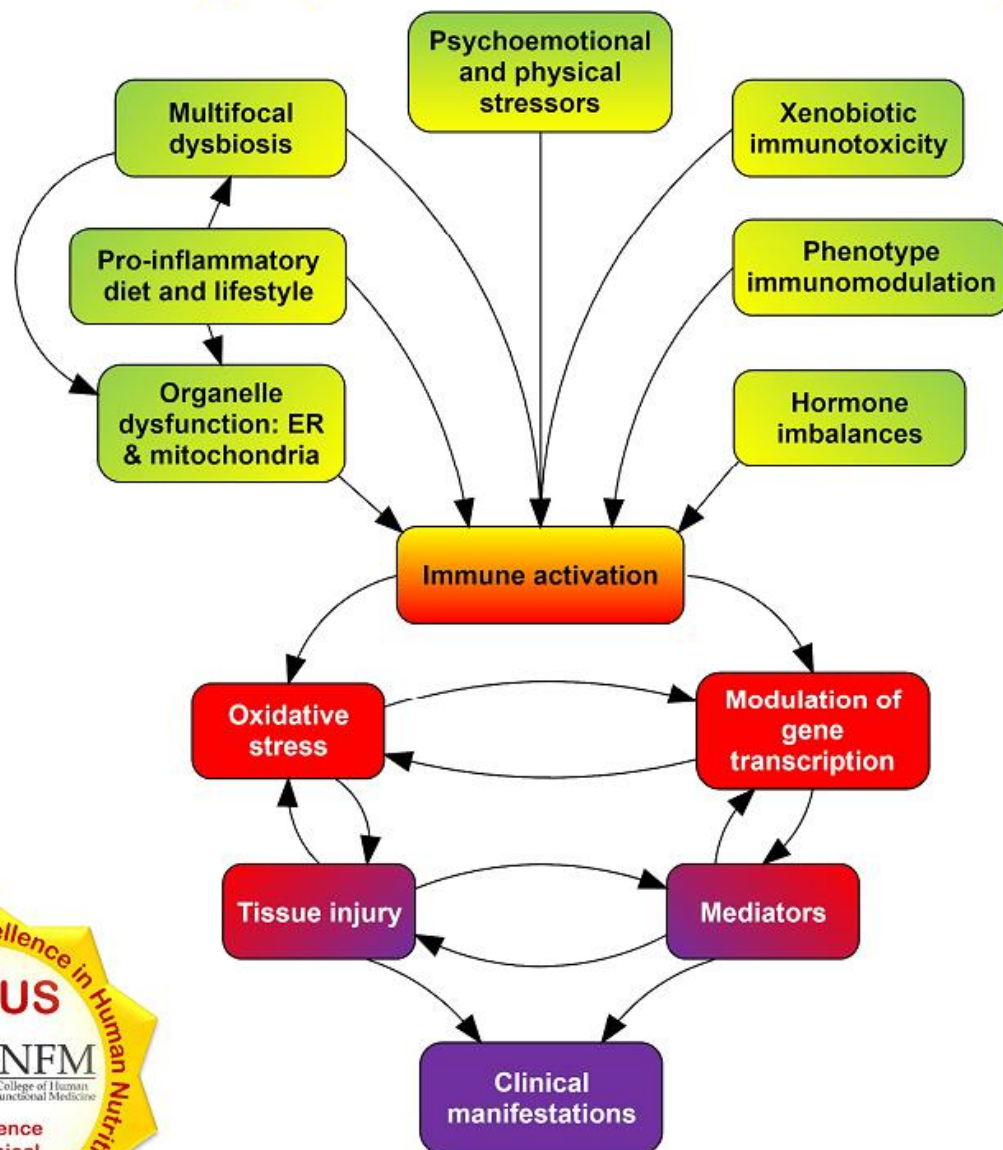
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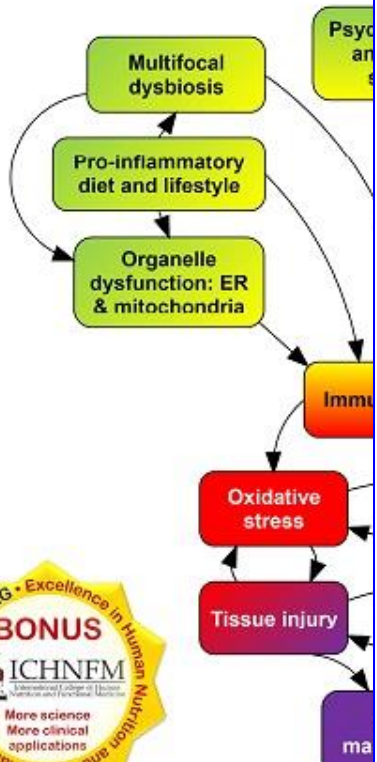
As of 2019 and for the foreseeable future, the most current versions of all major patient management and clinical treatment protocols is published in *Inflammation Mastery, 4<sup>th</sup> Edition* as a single volume of 1,182 pages available in full-color print at discounted pricing directly from ICHNFM from <https://www.ichnfm.org/im4>, while the digital formats are available via several different platforms, including Amazon's Kindle (free) software, Barnes and Noble's Nook, Apple iBook, etc as hyperlinked below. Per popular request by students who were studying (as a required textbook) only one section at a time, "IM4" was also published in two easier-to-carry separate volumes under the name *Textbook of Clinical Nutrition and Functional Medicine*, which contain chapters 1-4 (pages 1-712+index) and 5 (713-1154+index), respectively. **Video access is included with IM4 and TCNFM,I+2.** Availability in print and digital formats (examples): <https://www.ichnfm.org/im4>, <https://books.apple.com/us/author/alex-vasquez/id1139497284> <https://www.amazon.com/Inflammation-Mastery-4th-Immunosuppression-Polypharmacy-ebook/dp/B01KMZZLAQ> <https://www.barnesandnoble.com/w/inflammation-mastery-4th-edition-alex-vasquez/1123259586?ean=9780990620464>

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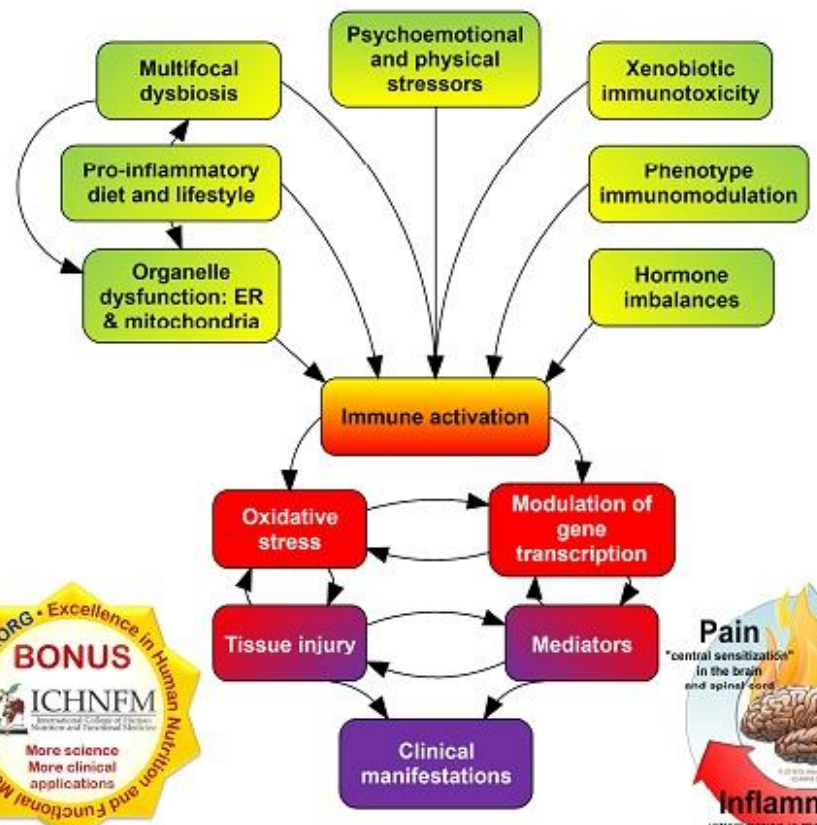
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**ALEX VASQUEZ D.C. N.D. D.O. F.A.C.N.**

- Doctor of Osteopathic Medicine, graduate of University of North Texas Health Science Center, Texas College of Osteopathic Medicine (2010)
- Doctor of Naturopathic Medicine, graduate of Bastyr University (1999)
- Doctor of Chiropractic, graduate of University of Western States (1996)
- Fellow of the American College of Nutrition (2013-present)
- Former Overseas Fellow of the Royal Society of Medicine
- Editor, *International Journal of Human Nutrition and Functional Medicine* [IntJHumNutrFunctMed.org](http://IntJHumNutrFunctMed.org). Former Editor, *Naturopathy Digest*; Former/Recent Reviewer for *Journal of Naturopathic Medicine*, *Alternative Therapies in Health and Medicine*, *Autoimmune Diseases*, *International Journal of Clinical Medicine*, and *PLOS One*
- Private practice of integrative and functional medicine in Seattle, Washington (2000-2001), Houston, Texas (2001-2006), Portland, Oregon (2011-2013), consulting practice (present)
- Consultant Researcher and Lecturer (2004-present), Biotics Research Corporation
- Teaching and Academics:
  - Director of Programs, International College/Conference on Human Nutrition and Functional Medicine [ICHNFM.org](http://ICHNFM.org)
  - Founder and Former Program Director of the world's first accredited university-affiliated graduate-level program in Functional Medicine
  - Adjunct Professor, Integrative and Functional Nutrition in Immune Health, Doctor of Clinical Nutrition program at Maryland University of Integrative Health
  - Former Adjunct Professor (2009-2013) of Laboratory Medicine, Master of Science in Advanced Clinical Practice
  - Former Faculty (2004-2005, 2010-2013) and Forum Consultant (2003-2007), The Institute for Functional Medicine
  - Former Adjunct Professor (2011-2013) of Pharmacology, Evidence-Based Nutrition, Immune and Inflammatory Imbalances, Principles of Functional Medicine, Psychology of Wellness
  - Former Adjunct Professor of Orthopedics (2000), Radiographic Interpretation (2000), and Rheumatology (2001), Naturopathic Medicine Program, Bastyr University
- Author of more than 100 articles and letters published in *JAMA—Journal of the American Medical Association*, *BMJ—British Medical Journal*, [TheLancet.com](http://TheLancet.com), *JAOA—Journal of the American Osteopathic Association*, *Annals of Pharmacotherapy*, *Journal of Clinical Endocrinology and Metabolism*, *Alternative Therapies in Health and Medicine*, *Nutritional Perspectives*, *Journal of Manipulative and Physiological Therapeutics*, *Integrative Medicine*, *Current Allergy and Asthma Reports*, *Nutritional Wellness*, *Evidence-based Complementary and Alternative Medicine*, and *Arthritis & Rheumatism: Official Journal of the American College of Rheumatology*

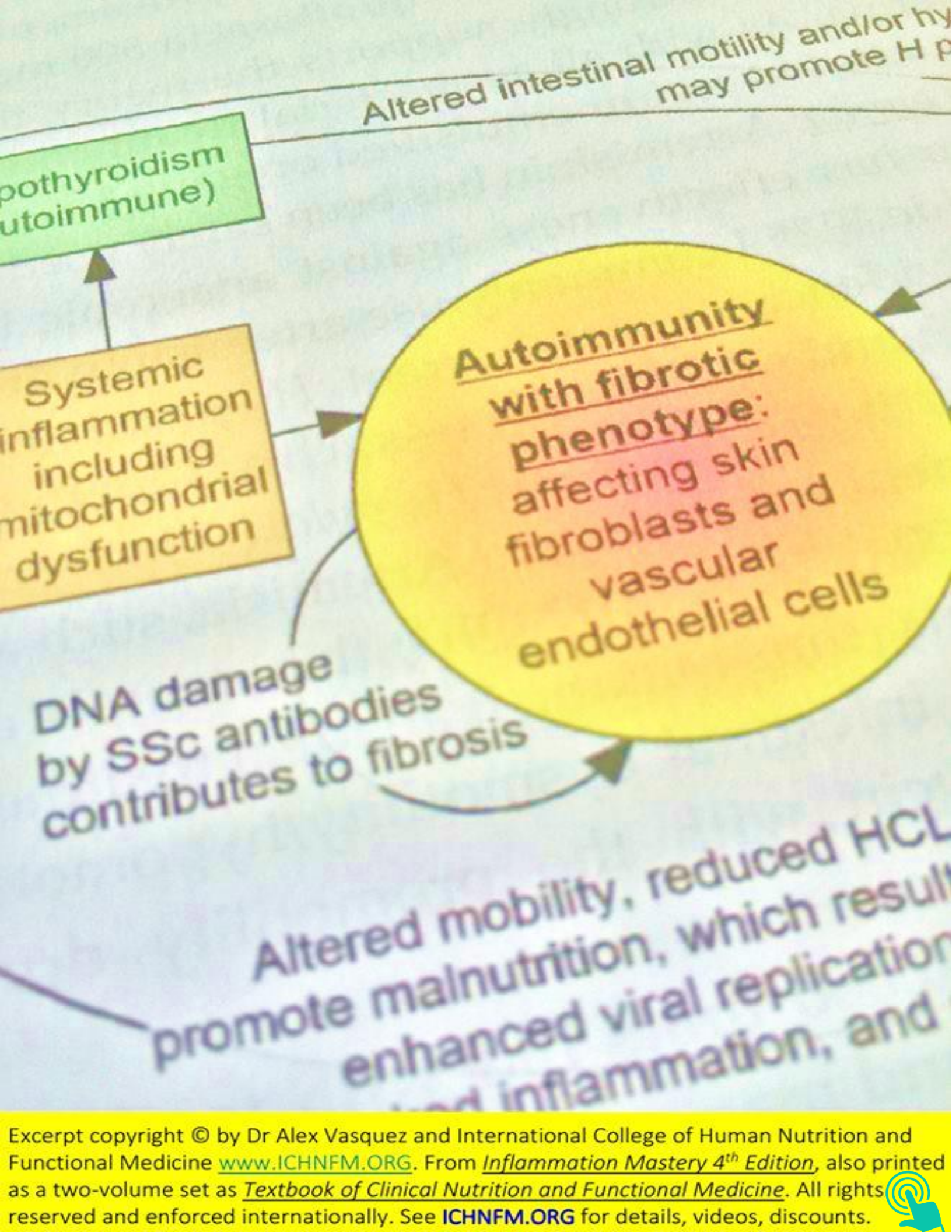
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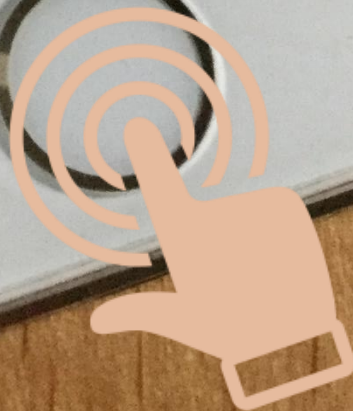


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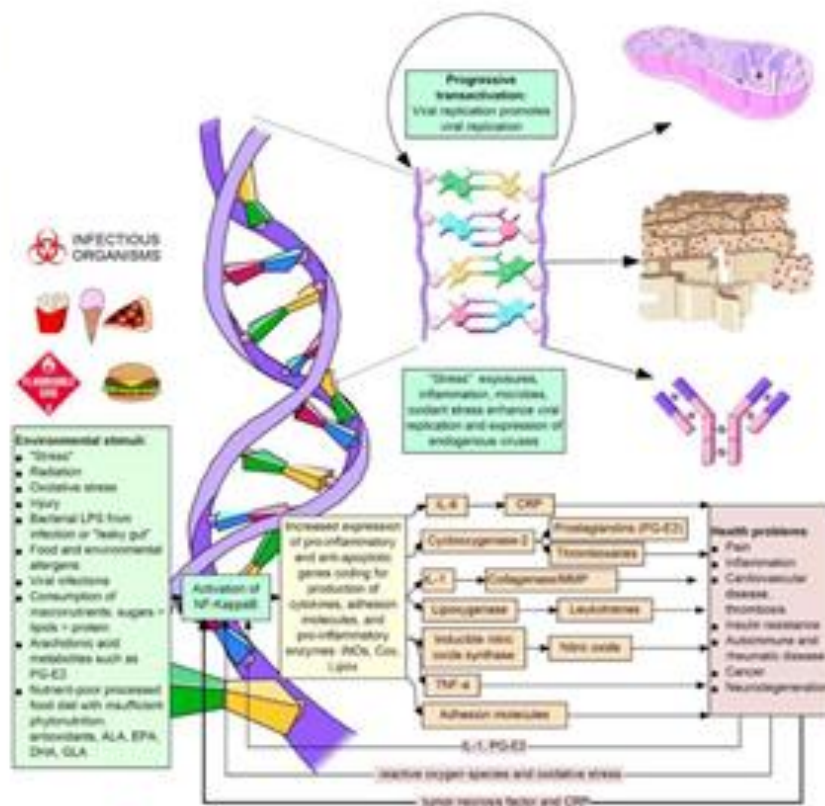


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THE PATH AHEAD

# Concerns About The Integrity of The Scientific Research Process—Focus On Recent Negative Publications Regarding Nutrition, Multivitamins, Fish Oil And Cardiovascular Disease



Alex Vasquez, DC, ND, DO; Joseph Pizzorno, ND, Editor in Chief

### Abstract

The next step in reestablishing credibility seems to us honesty and recognizing we all share a common goal of the health and wellness of the human community and the planet. Everyone agrees that the current healthcare system, despite its many incredible successes, is also

showing its limitations and is no longer sustainable. We believe the solution starts with us the researchers and editors. A good first step might be formally recognizing the errors and showing how we can and *intend* to get better.

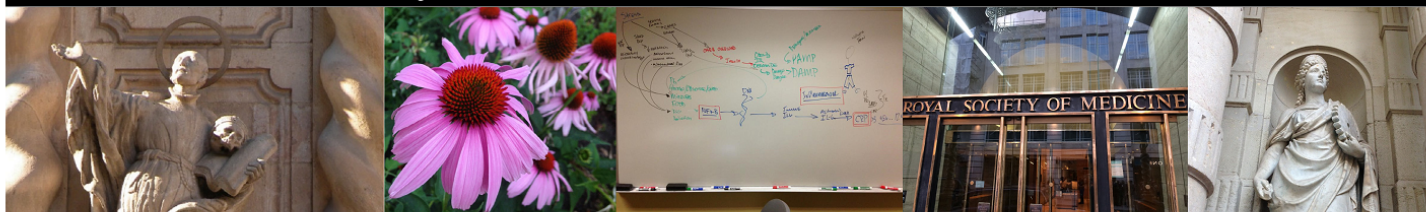
Evidence-based medicine—by definition—requires objective, reliable and accurate research and reviews from which to make the best decisions in patient care and public policy. The causes of inaccurate information, ranging from presumably innocent mistakes all the way to apparently intentional fraud, affect all scientific and biomedical disciplines.<sup>1</sup> While these accidental and intentional errors can derail our understanding of diseases and impact tens of thousands of affected patients, such inaccuracies in the field of nutrition are worldwide.<sup>2</sup> While a specific disease human population nutrition research particularly concerning nutrition research healthcare professions nutrition. Clinical vast majority of medical training programs are obviously in gastroenterology<sup>7</sup> training in clinical proclaims itself as including the entire territory of clinical nutrition.<sup>10</sup> A major and serious problem arises when unskilled and invalid research is published by authors (including nonphysician journalists<sup>11</sup>) in major journals which mischaracterizes the validity of nutrition interventions (e.g., essentially always concluding that nutritional interventions are inefficacious

or potentially hazardous) and then such research is used politically and in the media to disparage, restrict and regulate practitioners and nutrition supplement industry<sup>12</sup> to the detriment of human health.

Several factors disrupting the integrity of nutrition research are commonly found in studies published by “elite” universities in “top-tier” journals, which are then republished and distributed as “headlining news” in newspapers, magazines, and television, via which they ent policy and ons of people. examples of ublications, lists sed solutions. dependent upon stigative and ts of clinical rovements are gnorance in tion review recent examples of questionable or inaccurate publications related to nutrition. Perceived shortcomings are documented with both citations here and links to more detailed and authoritative reviews and video presentations. In some instances, speculations regarding the cause and consequences of identified errors are provided.

PDF articles: Full-text archives of the author’s articles are available per the following:

- <https://ichnfm.academia.edu/AlexVasquez>
- <https://www.ichnfm.org/public>
- VIDEO: BRIEF Critique of “Effects of n–3 Fatty Acid Supplements in Diabetes Mellitus: ASCEND Study” <https://vimeo.com/287650812>
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## Ending the Exploitation of Experts Begins with Educating Them about Employment, Curbing Enthusiasm to Preserve Enthusiasm

Alex Vasquez DC ND DO FACN

### **My own paths toward and perspectives on Education**

My passion for teaching and education began "formally" when I was about 9 years of age, sitting on the floor of Ms Hall's 4th grade classroom; from that vantage as I sat somewhat near my best friend Robert, I saw the destructive power of bad teaching and discrimination, and from that day I started analyzing teachers, teaching methods, educational and social structures, and ways to convey knowledge and inspire students. Additionally inspired by my teacher of English and Literature in my final years at Riverside Military Academy, I began college with the plan of eventually teaching "something—most likely English and Literature" because I appreciated and valued teaching, proper grammatical structure, and nuanced use of language; I later developed and interconnected my interests in teaching, writing, language, physiology, medicine, and nutrition to complete three doctorate degrees in the health sciences and publish more than 120 articles, letters, rebuttals, monographs, and books on a wide range of topics, with those publications ranging from dense 1-page Letters and Responses to published research up to single-author textbooks of more than 1,180 pages. I have taught at various colleges and universities at the undergraduate, graduate/Masters, and Doctorate levels and have lectured internationally for post-graduate medical education. I see teaching not simply as effective transferal of information, but also as a means to interconnect and inspire generations of people, notably in a reciprocal manner. At its best, teaching and learning are activities that reflect and support love for life itself.

### **Oh, the stories I could tell you about the innards of Academia, "nonprofits", and "accredited" schools**

I would be happiest to tell you that Academics and Administrators are vanguards support for fellow Professors, and commitment is to truth and reality setting ablaze the passions of the they teach, lead, and supervise; I in flower fields like a professoria

singing a rhythmical rendition of "The Hills are Alive...with the...Passions of Education and Intellectual Integrity." But a Pollyannaic representation of my observations would be a misrepresentation of the realities I have seen and experienced. I have seen university presidents lie to their students, expel experts for the sake of maintaining their own petty powers and preferences, and I have seen entire academic administrations lie (misrepresent) in unison to their boards of trustees and their accreditation commissions. I have seen stand-alone academic programs make millions of dollars in profit, while its administrators refuse to pay a living wage to doctorate-level infrastructure and while allowing themselves 6-week European vacations during major institutional initiatives. I have seen administrators lie to accreditors and allow students to cheat their way through graduate programs (by bypassing faulty examination software in online programs), and I have seen accreditors turn a blind eye to obvious university corruption, made worse when the accreditation commission is infiltrated by university administrators—thus did "accreditation" come to lose its value. I have seen "nonprofit educational institutions" underpay their faculty, plagiarize from their faculty, resell the work of other professionals without notice or compensation, and then pay their upper administrators in excess of US\$160,000 for less than part-time work—thus did "nonprofit organization" come to lose its value. I have seen schools blackmail excellent professors and leaders in education with gag orders, legal threats, and financial bribery (range US\$25,000 up to \$250,000) to buy their silence about institutional corruption. I have corresponded with employment attorneys, State Attorneys General, and US Department of Education, most of whom shrugged their shoulders and said, "That's the way it is in academia." Sorry

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## Misrepresentations of Clinical Nutrition in Mainstream Medical Media: Growing Importance of Legitimate Expertise in Independent Peer-Reviewed Publications - Part 1

### 2018 As a Milestone in the Post-Truth Era

Among the various topics that have either interested or fascinated me throughout my youth and well into my adult years, Nutrition has certainly reigned supreme. My personal routine has been to read as much as reasonably and practically possible on the topic, while not doing so to the exclusion of other topics in biomedicine, psychosociology and philosophy. Thus, with roughly 30 years of experience in reading books and primary research in the field of Nutrition, I could not help but notice the radical departures that occurred in 2018 from the previous norms to which I had grown accustomed.

Of course, 2018 was not the first year during which “bad research” was published in mainstream medical journals and then replicated throughout the echo chamber of mass media; one could observe this periodically occurring throughout the past 50 years, starting not at least with the demonization of dietary cholesterol and the glorification of processed foods, especially refined grains and so-called vegetable oils. But in 2018 what many of us observed was not simply poorly performed research but, in some cases, radical departures from any attempt to provide descriptions that could be considered “reasonable” by previous standard.<sup>1</sup> Especially related to the field of nutrition, mainstream medical journals and the media which parrots their conclusions have begun to make overt misrepresentations of Nutrition with regard for science, logic, biomedical history and

One has to be aware of a few key ironies that characterize mainstream medical discussions of nutrition: that 1) medical physicians receive essentially no education in clinical nutrition in their graduate school education and in their post-graduate residency training<sup>2</sup>, 2) medical physicians and organizations publish “research” and commentaries (both of which commonly conclude that nutritional interventions are inefficacious or unsafe), despite their lack of formal education on the topic, and then 3) main-

stream medical voices consistently call for “regulating the nutrition supplement industry” despite their lack of training on the topic and because of negative conclusions based on their own poorly conducted research and self-serving conclusions. As such, not only are the map-makers blind, but they mislead their blind followers, and then both groups promote themselves as expert cartographers and guides when advising the public on an area that none of them have studied or understood. We should have no surprise whatsoever when the “medical community” publishes poorly conducted and self-serving “research” on the topic of nutrition, to reach their desired conclusion that nutrition is unsafe and inefficacious, and that the profitable market needs to be managed of course by the selfsame “medical community” that is never received a decent 15 minutes on the topic of therapeutic nutrition. Pervasive and persistent ignorance on the topic of nutrition among medical physicians must be understood as intentional and strategic, because otherwise this problem would have been solved 30 years ago when it was first discussed during what was called at the time the “golden age of nutrition.”<sup>3</sup> The easiest way to manipulate people and to keep them in a perpetual state of confusion, ineffectiveness, and dependency is to

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- **VIDEO:** Bad Science in Medical Nutrition: Politics of Fish Oil <https://vimeo.com/314997927>

when pondering the probable future of intellectual integrity and the products of education.



# Mitochondrial Medicine Arrives to Prime Time in Clinical Care: Nutritional Biochemistry and Mitochondrial Hyperpermeability (“Leaky Mitochondria”) Meet Disease Pathogenesis and Clinical Interventions

Alex Vasquez, DC, ND, DO, FACN

Alex Vasquez, DC, ND, DO, FACN, is director of programs at the International College of Human Nutrition and Functional Medicine in Barcelona, Spain and online at ICHNFM.org. (*Altern Ther Health Med.* 2014;20(suppl 1):26-30.)

Corresponding author: Alex Vasquez, DC, ND, DO, FACN  
E-mail address: [avasquez@ichnfm.org](mailto:avasquez@ichnfm.org)

## MITOCHONDRIAL MEDICINE ARRIVES TO GENERAL PRACTICE AND ROUTINE PATIENT CARE

Mitochondrial disorders were once relegated to “orphan” status as topics for small paragraphs in pathology textbooks and the hospital-based practices of subspecialists. With the increasing appreciation of the high frequency and ease of treatment of mitochondrial dysfunction, this common cause and consequence of many conditions seen in both primary and specialty care deserves the attention of all practicing clinicians.

We all know that mitochondria are the intracellular organelles responsible for the production of the currency of cellular energy in the form of the molecule adenosine triphosphate (ATP); by this time, contemporary clinicians should be developing an awareness of the other roles that mitochondria play in (patho)physiology and clinical practice. Beyond being simple organelles that make ATP, mitochondria

play clinical inflammatory disease such as disorders such as stated during Nutrition and September 2014, mitochondrial

mitochondrial dysfunction to clinical diseases must be

considered on a routine basis in clinical practice. *Mitochondrial medicine* is no longer an orphan topic, nor is it a superfluous consideration relegated to boutique practices. Mitochondrial medicine is ready for prime time—now—both in the general practice of primary care as well as in specialty and subspecialty medicine. What I describe here as the “new” mitochondrial medicine is the application of assessments and treatments to routine clinical practice primarily for the treatment of secondary/acquired forms of mitochondrial impairment that contribute to common conditions such as fatigue, depression, fibromyalgia, diabetes mellitus, hypertension, neuropsychiatric and neurodegenerative conditions, and other inflammatory and dysmetabolic conditions such as allergy and autoimmunity.

## BEYOND BIOCHEMISTRY

Structure and function are of course intimately related and must be appreciated before clinical implications can be understood and interventions thereafter applied with practical precision. The 4 main structures and spaces of the mitochondria are (1) intramitochondrial matrix—the innermost/interior aspect of the mitochondria containing various proteins, enzymes of the Krebs cycle, and mitochondrial DNA; (2) inner membrane—the largely impermeable lipid-rich convoluted/invaginated membrane that envelopes and defines the matrix and which is the structural home of many enzymes, transport systems, and important structures such as cardiolipin and the electron

ce—contains kinase and comparatively (n) and—like h active and that need to to appreciate the highest

importance; just as we have come to appreciate the

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### Orthomolecular Medicine, Catalytic Creativity, and the Psychosocial Ecosystem

#### Transitioning From One Year to the Next

Various cultures since time immemorial have marked and celebrated the winter solstice with celebrations, meals with friends and family, and time away from work; transitioning from one calendar year to the next has given people pause and a moment to reflect on the events that happened in the past year and what might be anticipated in the next. Reflection with anticipation along with the realization that the future is somewhat malleable inclines people to imagine how the future might be shaped by the exertion of some modicum of creativity and effort. Any realistic conception of how we might improve the near future must segue from our recent past; we must have an awareness of what is going on around us as we look toward the future to visualize ourselves living within it and also acting upon it. What is going on in the world and how might I act upon that trend and flow in order to improve both its transition and its destination? What should each of us do on a personal level to (in the words of Mahatma Gandhi) be, embody, and materialize the change(s) that we want to see in the world?

#### Salutation and Introduction From the Journal's New Editor

Over the past few years I have reflected on several occasions how much I enjoy editing, and so I was correspondingly surprised and pleased when I was offered the opportunity to be the next Editor for the *Journal of Orthomolecular Medicine*. I began studying nutrition and orthomolecular concepts in my teen years and more diligently as I entered graduate school in the early 1990s. I read the "nutrition" book that I read in high school, *Your Nerves* (1975) by Jonathan V Wright, MD, of this was followed immediately by the book *The Mind of Jonathan V Wright* (1975) by Jonathan V Wright, MD, of whom would later be my mentor at the University of Maryland. By the mid-1990s I had read Jeffrey Bland PhD had read the book *Orthomolecular Medicine*, which was a personal<sup>3</sup> reasons. By this time my own personal library contained several hundred books, mostly dedicated to nutrition and health with another large section on philosophy and psychology. In 1994, I joined the Review Staff of the *Journal*

*of Naturopathic Medicine*, and I started publishing nutrition articles, perhaps most of which might be seen as practice in preparation of an important letter published in 1996 by the American College of Rheumatology in their journal *Arthritis and Rheumatism*. Since those early years and during the course of three doctorate degrees and teaching thousands of students/attendees internationally, I have reviewed for<sup>4</sup> and published in<sup>5</sup> a wide range of refereed journals in addition to publishing commissioned books, chapters, and independent publications and videos. Being an author and reviewer for many different publications—along with my experiences teaching internationally, treating patients in various settings, designing and directing academic programs, and producing educational videos—has given me a wide range of experiences and insights that I hope to bring to the benefit of the *Journal of Orthomolecular Medicine*.

#### We Must Work Together if We Are Going to Succeed

I have to start this conversation with a few hopes, assumptions, and beliefs, namely that you (the reader) and I (the author and new Editor) have a few things in common. On a professional level, by virtue of the fact that you are reading this essay, I will assume that you are interested or actively engaged in healthcare, medicine, nutrition, research and/or public health. I might also imagine that some smaller percentage of our new and established readers are perhaps less inclined toward the mechanisms and more drawn to the *Journal of Orthomolecular Medicine* for its potential humanistic insights and social contributions; we can reasonably expect that competent healthcare providers (and competent nutrition) are basic to human health. If you admit a counterargument to my assertions, they are more to the point, my assertions are regardless of personal position. I will share some common ground with you the following:

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• We each want to receive and deliver the best healthcare possible: If we have a problem, then we each want the best possible solution. Efficiency of time or money is not the top priority when we are seeking solutions





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**Mini-Review • Continuing Education • Microbiome • Dysbiosis • Infectious Disease**

## Translating Microbiome (Microbiota) and Dysbiosis Research into Clinical Practice: The 20-Year Development of a Structured Approach that Gives Actionable Form to Intellectual Concepts

Alex Vasquez DC ND DO FACN

### Experience and Perspectives

Many years ago when I published my first books<sup>1,2</sup> and articles<sup>3</sup> detailing "dysbiosis", the word could hardly be found in the Medline index, the topic was controversial at best and ethereal at worst, the term "microbiome" (first published in French in 1949 and in English in 1988) was virtually unknown, and I spent most of the time and space in my lectures and articles substantiating and defending the condition's existence. These days, everyone is talking about microbiome, dysbiosis, "leaky gut" (thanks largely to Leo Galland MD), and my 1996 article on "Silent Infections and Gastrointestinal Dysbiosis" has been downloaded at least 4,000 times and is one of the top 1% most popular articles on Academia.edu.<sup>4</sup> In the preparation of my dysbiosis lecture at a major functional medicine conference in 2010, I found that only 180 Medline articles indexed the term "dysbiosis", and now—slightly less than five years later—more than 1,200 articles index that term. Obviously, the dysbiosis concept has

become popular, but to do with it in *Functional Medicine* the complete Project, the that live in to anxiety a tantalizing therapeutic being integ

### "Dysbiosis" is an important concept, but doctors cannot treat concepts.

We have to define, describe, and deconstruct the microbes, molecules, and mechanisms into their components, then rebuild a conceptual scaffold and intellectual structure that becomes a useful tool that, with study and experience, can be used in a clinical setting to effective benefit.

practical application is a bit indelicate and cumbersome beyond the most commonly repeated advice of advocating probiotics, avoiding antibiotics, perhaps delving into using botanical antimicrobials and laboratory testing. Breath testing (an insensitive test for only one subtype of gastrointestinal dysbiosis) and microbiologic testing have become popular to the point of overuse as doctors grapple for clinical clues. (Noteworthy in the conversation on functional laboratory testing is that one functional medicine laboratory in particular used inaccurate proprietary microbe-identification methods to extract

they only to suffering and

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# CME

CONTINUING MEDICAL EDUCATION

## THE CLINICAL IMPORTANCE OF VITAMIN D (CHOLECALCIFEROL): A PARADIGM SHIFT WITH IMPLICATIONS FOR ALL HEALTHCARE PROVIDERS

Alex Vasquez, DC, ND, Gilbert Manso, MD, John Cannell, MD

**Alex Vasquez, DC, ND** is a licensed naturopathic physician in Washington and Oregon, and licensed chiropractic doctor in Texas, where he maintains a private practice and is a member of the Research Team at Biotics Research Corporation. He is a former Adjunct Professor of Orthopedics and Rheumatology for the Naturopathic Medicine Program at Bastyr University. **Gilbert Manso, MD**, is a medical doctor practicing integrative medicine in Houston, Texas. In prac-

tice for more than 35 years, he is Board Certified in Family Practice and is Associate Professor of Family Medicine at University of Texas Medical School in Houston. **John Cannell, MD**, is a medical physician practicing in Atascadero, California, and is president of the Vitamin D Council (Cholecalciferol-Council.com), a non-profit, tax-exempt organization working to promote awareness of the manifold adverse effects of vitamin D deficiency.

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### OBJECTIVES

Upon completion of this article, participants should be able to do the following:

1. Appreciate and identify the manifold clinical presentations and consequences of vitamin D deficiency
2. Identify patient groups that are predisposed to vitamin D hypersensitivity
3. Know how to implement proper doses and with

While we are all familiar with the important role of vitamin D in calcium absorption and bone metabolism, many doctors and patients are not aware of the recent research on vitamin D and the widening range of therapeutic applications available for cholecalciferol, which can be classified as both a vitamin and a pro-hormone. Additionally, we also now realize that the Food and Nutrition Board's previously defined Upper Limit (UL) for safe intake at 2,000 IU/day was set far too low and that the physiologic requirement for vitamin D in adults may be as high as 5,000 IU/day, which is less than half of the >10,000 IU that can be produced endogenously with full-body sun exposure.<sup>1,2</sup> With the discovery of vitamin D receptors in tissues other than the gut and bone—especially the brain, breast, prostate, and lymphocytes—and the recent research suggesting

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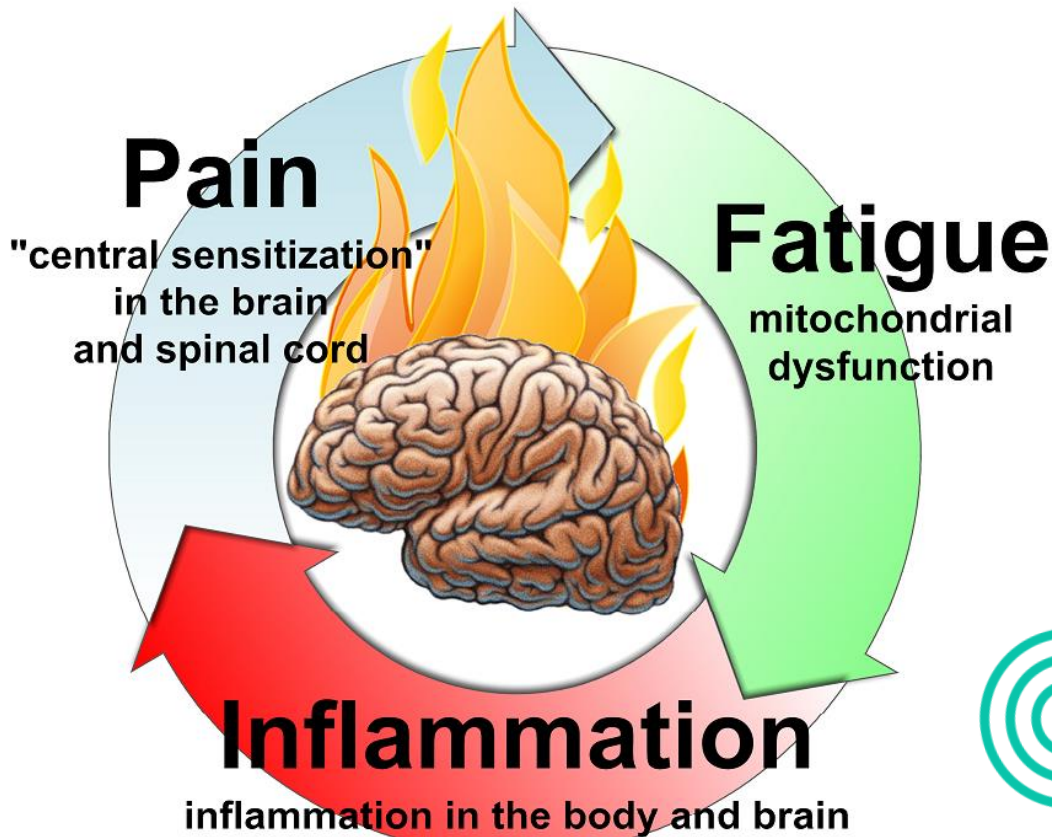
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# BRAIN INFLAMMATION IN CHRONIC PAIN, MIGRAINE AND FIBROMYALGIA

THE PARADIGM-SHIFTING GUIDE FOR DOCTORS AND  
PATIENTS DEALING WITH CHRONIC PAIN



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*Alex Vasquez, D.C., N.D., D.O., F.A.C.N.*  
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