

Revisiting the Five-Part Nutritional Wellness Protocol: The Supplemented Paleo-Mediterranean Diet

Alex Vasquez, DC, ND, DO

ABSTRACT: This article reviews the five-part nutritional protocol that incorporates a health-promoting nutrient-dense diet and essential supplementation with vitamins/minerals, specific fatty acids, probiotics, and physiologic doses of vitamin D3. This foundational nutritional protocol has proven benefits for disease treatment, disease prevention, and health maintenance and restoration. Additional treatments such as botanical medicines, additional nutritional supplements, and pharmaceutical drugs can be used atop this foundational protocol to further optimize clinical effectiveness. The rationale for this five-part protocol is presented, and consideration is given to adding iodine-iodide as the sixth component of the protocol.

INTRODUCTION:

In 2004 and 2005 I first published a “five-part nutrition protocol”^{1,2} that provides the foundational treatment plan for a wide range of health disorders. This protocol served and continues to serve as the foundation upon which other treatments are commonly added, and without which those other treatments are likely to fail, or attain suboptimal results at best.³ Now as then, I will share with you what I consider a basic foundational protocol for wellness promotion and disease treatment. I have used this protocol in my own self-care for many years and have used it in the treatment of a wide range of health-disease conditions in clinical practice.

REVIEW:

This nutritional protocol is validated by biochemistry, physiology, experimental research, peer-reviewed human trials, and the clinical application of common sense. It is the most nutrient-dense diet available, satisfying nutritional needs and thereby optimizing metabolic processes while promoting satiety and weight loss/optimization. Nutrients are required in the proper amounts, forms, and approximate ratios for critical and innumerable physiologic functions; if nutrients are lacking, the body cannot function *normally*, let alone *optimally*. Impaired function results in subjective and objective manifestations of what is eventually labeled as “disease.” Thus, a powerful and effective alternative to treating diseases with drugs is to re-establish normal/optimal physiologic function by replenishing the body with essential nutrients, reestablishing hormonal balance (“orthoendocrinology”), promoting detoxification of environmental toxins, and by reestablishing the optimal microbial milieu, especially the eradication of (multifocal) dysbiosis; this multifaceted approach can be applied to several diseases, especially those of the inflammatory and autoimmune varieties.⁴

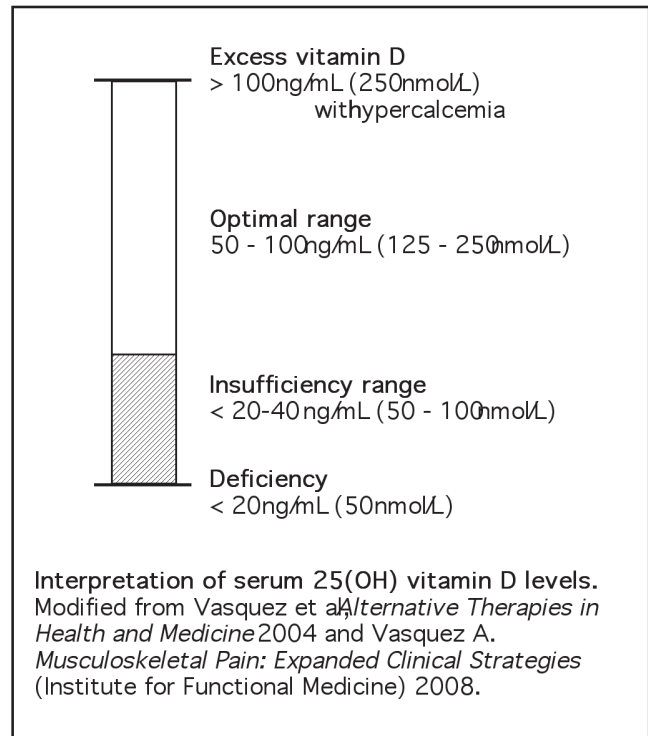
Of course, most diseases are multifactorial and therefore require multicomponent treatment plans, and some diseases actually require the use of drugs in conjunction with assertive interventional nutrition. However, while only a smaller portion of patients actually need drugs for the long-

term management their problems, all clinicians should agree that everyone needs a foundational nutrition plan because nutrients—not drugs—are universally required for life and health. This five-part nutrition protocol is briefly outlined below; a much more detailed substantiation of the underlying science and clinical application of this protocol was recently published in a review of more than 650 pages and approximately 3,500 citations.⁵

1. Health-promoting Paleo-Mediterranean diet: Following an extensive review of the research literature, I developed what I call the “supplemented Paleo-Mediterranean diet.” In essence, this diet plan combines the best of the Mediterranean diet with the best of the Paleolithic diet, the latter of which has been best distilled by Dr. Loren Cordain in his book “The Paleo Diet”⁶ and his numerous scientific articles.^{7,8,9} The Paleolithic diet is superior to the Mediterranean diet in nutrient density for promoting satiety, weight loss, and improvements/normalization in overall metabolic function.^{10,11} This diet places emphasis on fruits, vegetables, nuts, seeds, and berries that meet the body’s needs for fiber, carbohydrates, and most importantly, the 8,000+ phytonutrients that have additive and synergistic health effects¹²—including immunomodulating, antioxidant, anti-inflammatory, and anti-cancer benefits. High-quality protein sources such as fish, poultry, eggs, and grass-fed meats are emphasized. Slightly modifying Cordain’s paleo diet, I also advocate soy and whey protein isolates for their high-quality protein and their anticancer, cardioprotective, and mood-enhancing (due to the high tryptophan content) benefits. Potatoes and other starchy vegetables, wheat and other grains including rice are discouraged due to their high glycemic indexes and high glycemic loads, and their relative insufficiency of fiber and phytonutrients compared to fruits and vegetables. Grains such as wheat, barley, and rye are discouraged due to the high glycemic loads/indexes of most breads, pastries, and other grain-derived products, as well as due to the

immunogenicity of constituents such as gluten, a protein composite (consisting of a prolamin and a glutelin) that can contribute to disorders such as migraine, epilepsy, eczema, arthritis, celiac disease, psoriasis and other types of autoimmunity. Sources of simple sugars and foreign chemicals such as colas/sodas (which contain artificial colors, flavors, and high-fructose corn syrup, which contains mercury¹³ and which can cause the hypertensive-diabetic metabolic syndrome¹⁴) and processed foods (e.g., “TV dinners” and other manufactured snacks and convenience foods) are strictly forbidden. Chemical preservatives, colorants, sweeteners, flavor-enhancers such as monosodium glutamate and carrageenan are likewise avoided. In summary, this diet plan provides plenty of variety, as most dishes comprised of poultry, fish, lean meats, soy, eggs, fruits, vegetables, nuts, berries, and seeds are allowed. The diet provides an abundance of fiber, phytonutrients, carbohydrates, potassium, and protein, while simultaneously being low in fat, sodium, arachidonic acid, and “simple sugars.” The diet must be customized with regard to total protein and calorie intake, as determined by the size, status, and activity level of the patient; individual per-patient food allergens should be avoided. Regular consumption of this diet has shown the ability to reduce hypertension, alleviate diabetes, ameliorate migraine headaches, and result in improvement of overall health and a lessening of the severity of many common “diseases”, particularly those with an autoimmune or inflammatory component. This Paleo-Mediterranean diet is supplemented with vitamins, minerals, fatty acids, and probiotics—making it the “supplemented Paleo-Mediterranean diet” as described below.

2. **Multivitamin and multimineral supplementation:** Vitamin and mineral supplementation has been advocated for decades by the chiropractic/naturopathic professions while being scorned by so-called “mainstream medicine.” Vitamin and mineral supplementation finally received bipartisan endorsement when researchers from Harvard Medical School published a review article in *Journal of the American Medical Association* that concluded, “Most people do not consume an optimal amount of all vitamins by diet alone. ...it appears prudent for all adults to take vitamin supplements.”¹⁵ Long-term nutritional insufficiencies experienced by “most people” promote the development of “long-latency deficiency diseases”¹⁶ such as cancer, neuroemotional deterioration, and cardiovascular disease. Impressively, the benefits of multivita-



min/multimineral supplementation have been demonstrated in numerous clinical trials. Multivitamin/multimineral supplementation has been shown to improve nutritional status and reduce the risk for chronic diseases¹⁷, improve mood¹⁸, potentiate antidepressant drug treatment¹⁹, alleviate migraine headaches (when used with diet improvement and fatty acids²⁰), improve immune function and infectious disease outcomes in the elderly²¹ (especially diabetics²²), reduce morbidity and mortality in patients with HIV infection^{23, 24}, alleviate premenstrual syndrome^{25, 26} and bipolar disorder²⁷, reduce violence and antisocial behavior in children²⁸ and incarcerated young adults (when used with essential fatty acids²⁹), and improve scores of intelligence in children.³⁰ Multivitamin and multimineral supplementation provides anti-inflammatory benefits, as evidenced by significant reduction in C-reactive protein (CRP) in a double-blind, placebo-controlled trial.³¹ The ability to safely and affordably deliver these benefits makes multimineral-multivitamin supplementation an essential component of any and all health-promoting and disease-prevention strategies. A few cautions need to be observed; for example, vitamin A can (rarely) result in liver damage with chronic consumption of 25,000 IU or more, and intake should generally not exceed 10,000 IU per day in women of childbearing age. Also, iron should not

be supplemented except in patients diagnosed with iron deficiency by a blood test (serum ferritin).

3. **Physiologic doses of vitamin D3:** The prevalence of vitamin D deficiency varies from 40-80 percent (general population) to almost 100 percent (patients with musculoskeletal pain) among Americans and Europeans. Vasquez, Manso, and Cannell described the many benefits of vitamin D3 supplementation in an assertive review published in 2004.³² Our publication showed that vitamin D deficiency causes or contributes to depression, hypertension, seizures, migraine, polycystic ovary syndrome, inflammation, autoimmunity, and musculoskeletal pain, particularly low-back pain. Clinical trials using vitamin D supplementation have proven the cause-and-effect relationship between vitamin D deficiency and most of these conditions by showing that each could be cured or alleviated with vitamin D supplementation. In our review of the literature, we concluded that daily vitamin D doses should be 1,000 IU for infants, 2,000 IU for children, and 4,000 IU for adults, although some adults respond better to higher doses of 10,000 IU per day. Cautions and contraindications include the use of thiazide diuretics (e.g., hydrochlorothiazide) or any other medications that promote hypercalcemia, as well as granulomatous diseases such as sarcoidosis, tuberculosis, and certain types of cancer, especially lymphoma. Effectiveness is monitored by measuring serum 25-OH-vitamin D, and safety is monitored by measuring serum calcium. Dosing should be tailored for the attainment of optimal serum levels of 25-hydroxy-vitamin D3, generally 50-100 ng/ml (125-250 nmol/l) as illustrated.
4. **Balanced and complete fatty acid supplementation:** A detailed survey of the literature shows that five fatty acids have major health-promoting disease-preventing benefits and should therefore be incorporated into the daily diet and/or regularly consumed as dietary supplements.³³ These are alpha-linolenic acid (ALA; omega-3, from flaxseed oil), eicosapentaenoic acid (EPA; omega-3, from fish oil), docosahexaenoic acid (DHA; omega-3, from fish oil and algae), gamma-linolenic acid (GLA; omega-6, most concentrated in borage oil but also present in evening primrose oil, hemp seed oil, black currant seed oil), and oleic acid (omega-9, most concentrated in olive oil, which contains in addition to oleic acid many anti-inflammatory, antioxidant, and anticancer phytonutrients). Supplementing with one fatty acid can exacerbate an insufficiency of other fatty acids; hence the impor-

tance of balanced combination supplementation. Each of these fatty acids has health benefits that cannot be fully attained from supplementing a different fatty acid; hence, again, the importance of balanced combination supplementation. The benefits of GLA are not attained by consumption of EPA and DHA; in fact, consumption of fish oil can actually promote a deficiency of GLA.³⁴ Likewise, consumption of GLA alone can reduce EPA levels while increasing levels of proinflammatory arachidonic acid; both of these problems are avoided with co-administration of EPA any time GLA is used because EPA inhibits delta-5-desaturase, which converts dihomo-GLA into arachidonic acid. Using ALA alone only slightly increases EPA but generally leads to no improvement in DHA status and can lead to a reduction of oleic acid; thus, DHA and oleic acid should be supplemented when flaxseed oil is used.³⁵ Obviously, the goal here is physiologically-optimal (i.e., “balanced”) intake of all of the health-promoting fatty acids; using only one or two sources of fatty acids is not balanced and results in suboptimal improvement. In clinical practice, I routinely use combination fatty acid therapy comprised of ALA, EPA, DHA, and GLA for essentially all patients; when one appreciates that the average daily Paleolithic intake of n-3 fatty acids was 7 grams per day contrasted to the average daily American intake of 1 gram per day, we can see that—by using combination fatty acid therapy emphasizing n-3 fatty acids—we are simply meeting physiologic expectations via supplementation, rather than performing an act of recklessness or heroism. The product I use also contains a modest amount of oleic acid that occurs naturally in flax and borage seed oils, and I encourage use of olive oil for salads and cooking. This approach results in complete and balanced fatty acid intake, and the clinical benefits are impressive. Benefits are to be expected in the treatment of premenstrual syndrome, diabetic neuropathy, respiratory distress syndrome, Crohn’s disease, lupus, rheumatoid arthritis, cardiovascular disease, hypertension, psoriasis, eczema, migraine headaches, bipolar disorder, borderline personality disorder, mental depression, schizophrenia, osteoporosis, polycystic ovary syndrome, multiple sclerosis, and musculoskeletal pain. The discovery in September 2010 that the G protein-coupled receptor 120 (GPR120) functions as an n-3 fatty acid receptor that, when stimulated with EPA or DHA, exerts broad anti-inflammatory effects (in cell experiments) and enhances systemic insulin sensitivity (in animal study) confirms a new mechanism of action of fatty

acid supplementation and shows that we as clinician-researchers are still learning the details of the beneficial effects of commonly used treatments.³⁶

5. **Probiotics /gut flora modification:** Proper levels of good bacteria promote intestinal health, support proper immune function, and encourage overall health. Excess bacteria or yeast, or the presence of harmful bacteria, yeast, or “parasites” such as amoebas and protozoas, can cause “leaky gut,” systemic inflammation, and a wide range of clinical problems, especially autoimmunity. Intestinal flora can become imbalanced by poor diets, excess stress, immunosuppressive drugs, and antibiotics, and all of these factors are common among American patients. Thus, as a rule, I reinstate the good bacteria by the use of probiotics (good bacteria and yeast), prebiotics (fiber, arabinogalactan, and inulin), and the use of fermented foods such as kefir and yogurt for patients not allergic to milk. Harmful yeast, bacteria, and other “parasites” can be eradicated with the combination of dietary change, antimicrobial drugs, and/or herbal extracts. For example, oregano oil in an emulsified, time-released form has proven safe and effective for the elimination of various parasites encountered in clinical practice.³⁷ Likewise, the herb *Artemisia annua* (sweet wormwood) commonly is used to eradicate specific bacteria and has been used for thousands of years in Asia for the treatment and prevention of infectious diseases, including drug-resistant malaria.³⁸ Restoring microbial balance by providing probiotics, restoring immune function (immunorestitution) and eliminating sources of dysbiosis, especially in the gastrointestinal tract, genitourinary tract, and oropharynx, is a very important component in the treatment plan of autoimmunity and systemic inflammation.³⁹

Should combinations of iodine and iodide be the Sixth Component of the Protocol?: Both iodine and iodide have biological activity in humans. An increasing number of clinicians are using combination iodine-iodide products to provide approximately 12 mg/d; this is consistent with the average daily intake of iodine-iodide in countries such as Japan with a high intake of seafood, including fish, shellfish, and seaweed. Collectively, iodine and iodide provide antioxidant, antimicrobial, mucolytic, immunosupportive, antiestrogen, and anticancer benefits that extend far beyond the mere incorporation of iodine into thyroid hormones.⁵ Benefits of iodine/iodide in the treatment of asthma^{40,41} and systemic fungal infections^{42,43} have been documented, and many clinicians use combination iodine/iodide supplementation for the treatment of estrogen-driven conditions such as fibrocystic breast disease.⁴⁴ While additional

research is needed and already underway to further establish the role of iodine-iodide as a routine component of clinical care, clinicians should begin incorporating this nutrient into their protocols based on the above-mentioned physiologic roles and clinical benefits.

SUMMARY AND CONCLUSIONS:

In this brief review, I have described and substantiated a fundamental protocol that can serve as effective therapy for patients with a wide range of diseases and health disorders. Customizing the Paleo-Mediterranean diet to avoid patient-specific food allergens, using vitamin-mineral supplements along with physiologic doses of vitamin D and broad-spectrum balanced fatty acid supplementation, and ensuring “immunomicrobial” health with the skillful use of probiotics, prebiotics, immunorestitution, and antimicrobial treatments provides an excellent health-promoting and disease-eliminating foundation and lifestyle for many patients. Often, this simple protocol is all that is needed for the effective treatment of a wide range of clinical problems, even those that have been “medical failures” for many years. For other patients with more complex illnesses, of course, additional interventions and laboratory assessments can be used to optimize and further customize the treatment plan. Clinicians should avoid seeking “silver bullet” treatments that ignore overall metabolism, immune function, and inflammatory balance, and we must always remember that the attainment and preservation of health requires that we first meet the body’s basic nutritional and physiologic needs. This five-step protocol begins the process of meeting those needs. With it, health can be restored and the need for disease-specific treatment is obviated or reduced; without it, fundamental physiologic needs are not met, and health cannot be obtained and maintained. Addressing core physiologic needs empowers doctors to deliver the most effective healthcare possible, and it allows patients to benefit from such treatment.

Dr Alex Vasquez is a Director of the Medical Board of Advisors for Biotics Research Corporation and is the author of many articles and books for doctors. His professional degrees include Doctor of Chiropractic, (University of Western States, March 1996), Doctor of Naturopathic Medicine (Bastyr University, September 1999), and Doctor of Osteopathic Medicine (University of North Texas Health Science Center, May 2010).

REFERENCES

1. Vasquez A. Integrative Orthopedics: The Art of Creating Wellness While Managing Acute and Chronic Musculoskeletal Disorders. 2004, 2007
2. Vasquez A. A Five-Part Nutritional Protocol that Produces Consistently Positive Results. Nutritional Wellness 2005 September. Available in the printed version and on-line at http://www.nutritionalwellness.com/archives/2005/sep/09_vasquez.php
3. Vasquez A. Common Oversights and Shortcomings in the Study and Imple-

- mentation of Nutritional Supplementation. Naturopathy Digest 2007 June. <http://www.naturopathydigest.com/archives/2007/jun/vasquez.php>
4. Vasquez A. Integrative Rheumatology. IBMRC: 2006, 2009. <http://optimalhealthresearch.com/rheumatology.html>
 5. Vasquez A. Chiropractic and Naturopathic Mastery of Common Clinical Disorders. IBMRC: 2009. http://optimalhealthresearch.com/clinical_mastery.html
 6. Cordain L. The Paleo Diet. John Wiley and Sons, 2002
 7. O'Keefe JH Jr, Cordain L. Cardiovascular disease resulting from a diet and lifestyle at odds with our Paleolithic genome: how to become a 21st-century hunter-gatherer. *Mayo Clin Proc.* 2004 Jan;79(1):101-8
 8. Cordain L. Cereal grains: humanity's double edged sword. *World Rev Nutr Diet* 1999;84:19-73
 9. Cordain L, Eaton SB, Sebastian A, Mann N, Lindeberg S, Watkins BA, O'Keefe JH, Brand-Miller J. Origins and evolution of the Western diet: health implications for the 21st century. *Am J Clin Nutr.* 2005 Feb;81(2):341-54
 10. "A high micronutrient density diet mitigates the unpleasant aspects of the experience of hunger even though it is lower in calories. Hunger is one of the major impediments to successful weight loss. Our findings suggest that it is not simply the caloric content, but more importantly, the micronutrient density of a diet that influences the experience of hunger. It appears that a high nutrient density diet, after an initial phase of adjustment during which a person experiences "toxic hunger" due to withdrawal from pro-inflammatory foods, can result in a sustainable eating pattern that leads to weight loss and improved health." Fuhrman J, Sarter B, Glaser D, Acocella S. Changing perceptions of hunger on a high nutrient density diet. *Nutr J.* 2010 Nov 7;9:51 <http://www.nutritionj.com/content/9/1/51>
 11. "The Paleolithic group were as satiated as the Mediterranean group but consumed less energy per day (5.8 MJ/day vs. 7.6 MJ/day, Paleolithic vs. Mediterranean, p=0.04). Consequently, the quotients of mean change in satiety during meal and mean consumed energy from food and drink were higher in the Paleolithic group (p=0.03). Also, there was a strong trend for greater Satiety Quotient for energy in the Paleolithic group (p=0.057). Leptin decreased by 31% in the Paleolithic group and by 18% in the Mediterranean group with a trend for greater relative decrease of leptin in the Paleolithic group." Jonsson T, Granfeldt Y, Erlanson-Albertsson C, Ahren B, Lindeberg S. A Paleolithic diet is more satiating per calorie than a Mediterranean-like diet in individuals with ischemic heart disease. *Nutr Metab (Lond).* 2010 Nov 30;7(1):85.
 12. Liu RH. Health benefits of fruit and vegetables are from additive and synergistic combinations of phytochemicals. *Am J Clin Nutr* 2003;78(3 Suppl):517S-520S
 13. "With daily per capita consumption of HFCS in the US averaging about 50 grams and daily mercury intakes from HFCS ranging up to 28 µg, this potential source of mercury may exceed other major sources of mercury especially in high-end consumers of beverages sweetened with HFCS." Dufault R, LeBlanc B, Schnoll R, Cornett C, Schweitzer L, Wallinga D, Hightower J, Patrick L, Lukiw WJ. Mercury from chlor-alkali plants: measured concentrations in food product sugar. *Environ Health.* 2009 Jan 26;8:2 <http://www.ehjournal.net/content/8/1/2>
 14. Vasquez A. Integrative Medicine and Functional Medicine for Chronic Hypertension: An Evidence-based Patient-Centered Monograph for Advanced Clinicians. IBMRC: 2011. http://optimalhealthresearch.com/hypertension_functional_integrative_medicine.html See also: Reungjui S, Roncal CA, Mu W, Srinivas TR, Sirivongs D, Johnson RJ, Nakagawa T. Thiazide diuretics exacerbate fructose-induced metabolic syndrome. *J Am Soc Nephrol.* 2007 Oct;18(10):2724-31 <http://jasn.asnjournals.org/content/18/10/2724.full.pdf>
 15. Fletcher RH, Fairfield KM. Vitamins for chronic disease prevention in adults: clinical applications. *JAMA* 2002;287:3127-9
 16. Heaney RP. Long-latency deficiency disease: insights from calcium and vitamin D. *Am J Clin Nutr* 2003;78:912-9
 17. McKay DL, Perrone G, Rasmussen H, Dallal G, Hartman W, Cao G, Prior RL, Roubenoff R, Blumberg JB. The effects of a multivitamin/mineral supplement on micronutrient status, antioxidant capacity and cytokine production in healthy older adults consuming a fortified diet. *J Am Coll Nutr* 2000;19(5):613-21
 18. Benton D, Haller J, Fordy J. Vitamin supplementation for 1 year improves mood. *Neuropsychobiology* 1995;32(2):98-105
 19. Coppen A, Bailey J. Enhancement of the antidepressant action of fluoxetine by folic acid: a randomised, placebo controlled trial. *J Affect Disord* 2000;60:121-30
 20. Wagner W, Nootbaar-Wagner U. Prophylactic treatment of migraine with gamma-linolenic and alpha-linolenic acids. *Cephalgia* 1997;17:127-30
 21. Langkamp-Henken B, Bender BS, Gardner EM, Herrlinger-Garcia KA, Kelley MJ, Murasko DM, Schaller JP, Stechmiller JK, Thomas DJ, Wood SM. Nutritional formula enhanced immune function and reduced days of symptoms of upper respiratory tract infection in seniors. *J Am Geriatr Soc* 2004;52:3-12
 22. Barringer TA, Kirk JK, Santaniello AC, Foley KL, Michielutte R. Effect of a multivitamin and mineral supplement on infection and quality of life. A randomized, double-blind, placebo-controlled trial. *Ann Intern Med* 2003;138:365-71
 23. Fawzi WW, Msamanga GI, Spiegelman D, et al. A randomized trial of multivitamin supplements and HIV disease progression and mortality. *N Engl J Med* 2004;351:23-32
 24. Burbano X, Miguez-Burbano MJ, McCollister K, Zhang G, Rodriguez A, Ruiz P, Lecusay R, Shor-Posner G. Impact of a selenium chemoprevention clinical trial on hospital admissions of HIV-infected participants. *HIV Clin Trials* 2002;3:483-91
 25. Abraham GE. Nutritional factors in the etiology of the premenstrual tension syndromes. *J Reprod Med* 1983;28(7):446-64
 26. Stewart A. Clinical and biochemical effects of nutritional supplementation on the premenstrual syndrome. *J Reprod Med* 1987;32:435-41
 27. Kaplan BJ, Simpson JS, Ferre RC, Gorman CP, McMullen DM, Crawford SG. Effective mood stabilization with a chelated mineral supplement: an open-label trial in bipolar disorder. *J Clin Psychiatry* 2001;62:936-44
 28. Kaplan BJ, Crawford SG, Gardner B, Farrelly G. Treatment of mood lability and explosive rage with minerals and vitamins: two case studies in children. *J Child Adolesc Psychopharmacol* 2002;12(3):205-19
 29. Gesch CB, Hammond SM, Hampson SE, Eves A, Crowder MJ. Influence of supplementary vitamins, minerals and essential fatty acids on the antisocial behaviour of young adult prisoners. Randomised, placebo-controlled trial. *Br J Psychiatry* 2002;181:22-8
 30. Benton D. Micro-nutrient supplementation and the intelligence of children. *Neurosci Biobehav Rev* 2001;25:297-309
 31. Church TS, Earnest CP, Wood KA, Kampert JB. Reduction of C-reactive protein levels through use of a multivitamin. *Am J Med* 2003;115:702-7
 32. Vasquez A, Manso G, Cannell J. The clinical importance of vitamin D (cholecalciferol): a paradigm shift with implications for all healthcare providers. *Alternative Therapies in Health and Medicine* 2004;10:28-37 <http://optimalhealthresearch.com/cholecalciferol.html>
 33. Vasquez A. Reducing Pain and Inflammation Naturally - Part 1: New Insights into Fatty Acid Biochemistry and the Influence of Diet. *Nutritional Perspectives* 2004; October: 5, 7-10, 12, 14 <http://optimalhealthresearch.com/reprints/series/>
 34. Cleland LG, Gibson RA, Neumann M, French JK. The effect of dietary fish oil supplement upon the content of dihomo-gammalinolenic acid in human plasma phospholipids. *Prostaglandins Leukot Essent Fatty Acids* 1990 May;40(1):9-12
 35. Jantti J, Nikkari T, Solakivi T, Vapaatalo H, Isomaki H. Evening primrose oil in rheumatoid arthritis: changes in serum lipids and fatty acids. *Ann Rheum Dis* 1989;48(2):124-7
 36. Oh da Y, Talukdar S, Bae EJ, Imamura T, Morinaga H, Fan W, Li P, Lu WJ, Watkins SM, Olefsky JM. GPR120 is an omega-3 fatty acid receptor mediating potent anti-inflammatory and insulin-sensitizing effects. *Cell.* 2010 Sep 3;142(5):687-98 <http://www.cell.com/abstract/S0092-8674%2810%2900888-3?switch=standard>
 37. Force M, Sparks WS, Ronzio RA. Inhibition of enteric parasites by emulsified oil of oregano in vivo. *Phytother Res* 2000;14:213-4
 38. Schuster BG. Demonstrating the validity of natural products as anti-infective drugs. *J Altern Complement Med* 2001;7 Suppl 1:S73-82
 39. Vasquez A. Integrative Rheumatology. IBMRC: 2006, 2009. <http://optimalhealthresearch.com/rheumatology.html>
 40. Tuft L. Iodides in bronchial asthma. *J Allergy Clin Immunol.* 1981 Jun;67(6):497
 41. Falliers CJ, McCann WP, Chai H, Ellis EF, Yazdi N. Controlled study of iodotherapy for childhood asthma. *J Allergy.* 1966 Sep;38(3):183-92
 42. Tripathy S, Vijayashree J, Mishra M, Jena DK, Behera B, Mohapatra A. Rhinofacial zygomycosis successfully treated with oral saturated solution of potassium iodide: a case report. *J Eur Acad Dermatol Venereol.* 2007 Jan;21(1):117-9
 43. Bonifaz A, Saúl A, Paredes-Solis V, Fierro L, Rosales A, Palacios C, Araiza J. Sporotrichosis in childhood: clinical and therapeutic experience in 25 patients. *Pediatr Dermatol.* 2007 Jul-Aug;24(4):369-72
 44. Ghent WR, Eskin BA, Low DA, Hill LP. Iodine replacement in fibrocystic disease of the breast. *Can J Surg.* 1993 Oct;36(5):453-60