

Vitamin D and Coronavirus: Not a vaccine, nonetheless nature's humble natural cure

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Abstract: Objective - To review the leading relevant research regarding vitamin D's role in prevention of COVID-19 infection, progression and severity and innate immune function.

Discussion - The chiropractor's perspective is upheld that vitamin D supplementation may assist with the body's immune function and anti-viral capacity. It is acknowledged that the formal scientific literature is incomplete but growing rapidly and that it is favourable to the idea. In clinical terms, there is no harm and possibly great benefit for guiding patients to consider vitamin D supplementation in the endemic coronavirus era.

Conclusion - Chiropractors should consider the benefits of vitamin D supplementation in these days of virulent respiratory infection. There is a very little risk of any adverse events related to such a recommendation.

Indexing Terms: chiropractic; immunity; COVID, vitamin D, applied kinesiology, nutritional diagnosis.

Introduction

The plain truth is that most physicians who are seeing patients in the world today in our anointed 'Covid Era' do not have adequate knowledge about vitamin D deficiency and its serious consequences; nor of its proven relationship to improving Covid-19 outcomes for patients who contract the illness, and for preventing the infection in the first place.

In the last 40 years there has been much research in the field of vitamin D. The findings are astonishing, and their relationships specifically to Coronavirus is something every physician on earth needs to know immediately.

Chiropractic physicians view the immune system from a uniquely holistic perspective and consider how other systems, microbes and malfunctions affect its functioning. In the world of therapeutics, chiropractors offer a uniquely holistic and preventative model in this pandemic against a transmissible viral illness.

This is particularly true of the effect of nutritional imbalances upon the immune system's organs and tissues, as well as the emotional aspects of immune function, elaborated in the field of psychoneuroimmunology. (1)

... many chiropractic patients with musculoskeletal pain have Vit. D deficiency; many new papers are showing a role in mediating the damaging 'cytokine storm' of COVID. Vit. D also significantly strengthens the innate immune response, and goes well with Zinc and Vit. C to enhance natural immunity ...'



1. Wu D, Lewis ED, Pae M, Meydani SN. Nutritional Modulation of Immune Function: Analysis of Evidence, Mechanisms, and Clinical Relevance. Front Immunol. 2019 Jan 15;9:3160.

Resistance to infection is something we should all want most in a time of pandemic. But how is additional resistance to infection gained for chiropractic patients? How do we handle infection when it is present? What could prove to be a vital bridge between building immune system strength and chiropractic therapeutics?

The laws of natural human physiology are older and more certain than the realities of this highly adaptive new virus in human history. Resistance to infection is an individual's ability to successfully fight off invading bacteria, viruses, and other micro-organisms. When these invading micro-organisms first enter the body, numerous defense mechanisms mobilize to eliminate the invaders. When these defense mechanisms are successful, no infection results ... the high percentage of people who have mild symptoms with COVID-19 are also people with stronger immune systems and better health generally. (2)

This paper is free-to-read through PMC at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7692080/>.

We tend to think that bacteria or viruses cause infection. Looking at the situation from a more ancient, tried-and-true natural health care perspective, however, we can see that in most cases it is not the micro-organisms that cause the problem; it is the inability of an individual's body to cope with the micro-organisms. If the micro-organisms were the only cause of the COVID-19 infection and pneumonia problems, everyone would be infected. We know this is not the case when we compare societies like China and the United States, the Philippines and Sweden, each subjected to the same virus; only a certain percentage of the people - even in an almost epidemic situation - are overcome by the infectious process.

The key as always is to build natural resistance in yourself and your family and communities, so that significant infections are infrequent or nonexistent. THIS has been the message of natural health care practitioners from the beginning of time. It is your chiropractor's message to you today.

The Research

In a comprehensive review in 2020, applied kinesiology chiropractor and immunologist Dr. Sam Yanuck with colleagues at the *University of North Carolina School of Medicine* showed that Vitamin D supplementation is consistently effective in treatment of acute lower respiratory tract infection and decreasing incidences of COVID infections in the elderly. (3)

This paper is free to read through PMC at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7190003/>.

Yanuck is a chiropractor and assistant professor in the *Department of Physical Medicine and Rehabilitation* at the *University of North Carolina School of Medicine*, where he teaches the course '*The Immunology of Autoimmune Disease, Inflammation and Chronic Infection: A Research-Based Functional Medicine Perspective*.' He states that vitamin D '*may possess protective effects as preventive and adjuvant therapy of COVID-19 through reducing inflammation, improvement of mucociliary clearance, prevention of ventilator-induced lung injury, modulation of antiviral and antibacterial immunity.*'

Yanuck et al's immuno-physiological approach to Covid-19 is summarised in bullet form below, and features vitamin D at the very top of the list of natural and foundational immune system supports.

2. Mercola J, et al. Evidence Regarding Vitamin D and Risk of COVID-19 and Its Severity. *Nutrients*. 2020 Oct 31;12(11):3361.

3. Yanuck SF, et al. Evidence Supporting a Phased Immuno-physiological Approach to COVID-19 From Prevention Through Recovery. *Integr Med (Encinitas)*. 2020;19(Suppl 1):8-35.

- ▶ It must be recognized that sub-clinical vitamin D deficiency is still widely prevalent in both developed and developing countries, with a worldwide prevalence of at least 1 billion people being deficient. (4)

This paper is free-to-read through PMC at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3356951/>.

- ▶ Vitamin D may also play a role in mitigating the disabling and life-threatening ‘cytokine storm’ complication associated with SARS-CoV-2; and this has been confirmed in many recent studies. (5, 6)

These papers are free-to-read through PMC at <https://pubmed.ncbi.nlm.nih.gov/32876941/>, and <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7231123/>.

- ▶ Among 211 women in the Philippines, 93.8% were found to have low vitamin D levels, despite this being a very sunny country. (7)

This paper is free-to-read through PMC at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7784173/>.

- ▶ Plotnikof & Quigley found vitamin D deficiency in 89% of subjects with chronic musculoskeletal pain, an almost specific chiropractic patient population. (8)

This paper is free-to-read through PMC at <https://pubmed.ncbi.nlm.nih.gov/14661675/>.

- ▶ Abbasi et al also reported that (95.4%) of patients with musculoskeletal pain had vitamin D deficiency, and that 85.5% responded positively to vitamin D supplementation. (9)

This paper is free-to-read through PMC at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4776981/>.

- ▶ In another study with what might once again be called a chiropractic patient cohort, Glerup et al reported that 88% of women investigated who presented with muscle pains and weakness were severely vitamin D deficient. (10)

This paper is free-to-read through PMC at <https://pubmed.ncbi.nlm.nih.gov/11107965/>.

- ▶ Bischoff-Ferrari observed that adults with vitamin D deficiency present with muscle weakness and are more likely to fall and fracture their hip. (11)

This paper is free-to-read through PMC at <https://pubmed.ncbi.nlm.nih.gov/32458373/>.

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- Nair R, Maseeh A. Vitamin D: The ‘sunshine vitamin. J Pharmacol Pharmacother. 2012 Apr;3(2):118-26.
 - Daneshkhan A, et al. Evidence for possible association of vitamin D status with cytokine storm and unregulated inflammation in COVID-19 patients. Aging Clin Exp Res. 2020 Oct;32(10):2141-58.
 - WB Grant, et al. Evidence that Vitamin D Supplementation Could Reduce Risk of Influenza and COVID-19 Infections and Deaths. Nutrients. 2020 Apr 2;12(4):988.
 - Cabrera CC, et al. The Association between Maternal Serum Vitamin D Levels and Gestational Diabetes Mellitus among Filipino Patients: A Cross-Sectional Study J ASEAN Fed Endocr Soc. 2020;35(2):169-75.]
 - Plotnikoff GA, Quigley JM. Prevalence of severe hypovitaminosis D in patients with persistent, nonspecific musculoskeletal pain. Mayo Clin Proc. 2003 Dec;78(12):1463-70.
 - Abbasi M, et al. Is vitamin D deficiency associated with non specific musculoskeletal pain? Glob J Health Sci. 2012 Nov 11;5(1):107-11.
 - Glerup H. Vitamin D deficiency among immigrants. Ugeskr Laeger. 2000 Nov 13;162(46):6196-9.
 - Bischoff-Ferrari HA. Vitamin D in geriatric patients. Internist (Berl). 2020 Jun;61(6):535-40.

Signs and Symptoms

Chiropractors should consider vitamin D deficiencies in the presence of patients with musculoskeletal pain: osteoporosis, muscle cramps, pedal cramps, muscle pain and weakness, numbness in the legs when bilateral '*from the belt down*'; deep bone pain; for a patient who perspires around the head but much elsewhere in the rest of the body; for recurring immunity problems, and even Type II diabetes. The best form of whole food vitamin D likely comes from clean Cod Liver Oil.

Dosing and Body Indicators for Vitamin D

Vitamin D supplementation is usually at the level of 500 mg, 3x/day, or as directed. Dose varies depending on need and age. It is thought unlikely to overdose with any amount consumed. Generally, nutrients are better absorbed when taken throughout the day ... they also become a bigger part of the daily reality for the patient when taken at least twice a day. Choosing nutrients with a lower dosage and encouraging patients to use them more frequently is a useful strategy.

Discussion

The vitamin D deficiency state is easily corrected. People not exposed to the sun are at the greatest risk, including those who have been forced to stay housebound for months at a time, as well as those who spend little time out of doors. It is likely that every elderly person in the modern world who has complied with their government's quarantine of staying indoors is now vitamin D deficient.

It's important to note that the *Irish Medical Journal* reports that high dosages of vitamin D at the onset of a viral infection do not seem to provide the same protection as preventative use of vitamin D. (12) Let's remember that in Ireland, the year consists of '*9 months of winter and 3 months of ungodly weather*' as the Dublin adage says.

McCartney and Byrne recommend '*that all older adults, hospital inpatients, nursing home residents and other vulnerable groups (e.g. those with diabetes mellitus or compromised immune function, those with darker skin, vegetarians and vegans, those who are overweight or obese, smokers and healthcare workers) be urgently supplemented with 20-50ug/d of vitamin D to enhance their resistance to Covid-19, and that this advice be quickly extended to the general adult population.*'

90% of required vitamin D comes from exposure to sunlight. Anything that interferes with the penetration of solar ultraviolet radiation into the skin, such as during the recent era wherein entire nation-states were forced to remain indoors and under quarantine for months and even years at a time, diminished the cutaneous production of vitamin D for all their citizens. The most cost-effective and efficient method for preventing vitamin D deficiency is to have adequate exposure to sunlight.

Some dermatologists advise that people of all ages and ethnicities should avoid all direct exposure to sunlight and should always use sun protection when outdoors. This message is not only unfortunate, but it is misguided and has serious consequences in our anointed '*Coronavirus Era*', i.e., the increased risk of coronavirus from vitamin D deficiency and many other functional ~~illnesses and chronic di~~ diseases. There is little evidence that adequate sun exposure will substantially increase the risk of skin cancer; rather, long-term excessive exposure and repeated sunburns are associated with non-melanoma skin cancers. (13)

12. McCartney DM, Byrne DG. Optimisation of Vitamin D Status for Enhanced Immuno-protection Against Covid-19. *Ir Med J.* 2020 Apr 3;113(4):58.

13. Holick MF. Vitamin D: A millenium perspective. *J Cell Biochem.* 2003 Feb 1;88(2):296-307.

Historically it should be recalled that treating patients with outdoor activity and sunshine was a strategy successfully used during the 1918 Influenza Pandemic. The patients got better faster and with less complications and the 'frontliners' (the doctors and nurses) were less likely to become infected as well. Fresh air and sunshine naturally kill off viruses and bacteria. (14)

Because of the pandemic, vitamin D testing and treatment should be done preventatively for every chiropractic patient. Before the pandemic struck, the *British Medical Journal 'Thorax'* found 'vitamin D deficiency contributes directly to the acute respiratory distress syndrome (ARDS)'. In the coronavirus infections associated with SARS-CoV, MERS, and SARS-CoV2 (SARS-CoV-2), acute respiratory distress syndrome is the common serious complication that drives the other complications - lung, cardiac, kidney and liver. This study found 100% of patients with ARDS were vitamin D deficient. (15)

This paper is free-to-read through PMC at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4484044/>.

Public health measures that can reduce the risk of infection and death in addition to quarantines are desperately needed. Vitamin D supplementation will prove to be a useful measure to reduce risk and should be added to the approaches recommended by the *World Health Organization* for reduction of Covid-19 and its variants around the world. For treatment of people who become infected with COVID-19, higher vitamin D doses might be useful. Vitamin D optimization is the easiest, least expensive and most fundamentally protective strategy that anyone can do to minimize their risk of COVID-19 and other infections.

The chiropractic diagnostic method of the manual muscle test in response to the addition of a useful nutrient for the patient adds to the physician's nutritional knowledge an ability to determine, to a certain extent, the effects of various nutritional products on the biochemical individuality of the patient being evaluated. Zinc, vitamin D and C are good examples of this as they are commonly deficient upon laboratory exam, and specifically helpful in the innate immune system's defense against Covid. (16)

Nutritional assessment

Chiropractic nutritional analysis incorporated into the chiropractor's daily practice permits such major determinants of health as nutrition and stress to become integrated within the holistic physician's central tenet and message. No longer does nutrition appear as an adjunct (and arguably alien) concept which is difficult to rationalize with the more traditional concepts of the chiropractic subluxation, the osteopathic lesion or manual medicine's somatic dysfunction.

The integrative chiropractic approach to nutritional assessment (in combination with other standard measurements) permits the physician a reliable tool which connects a nutritional substance with a modifiable impairment (the inhibited muscle as tested with the MMT) and other 'body indicators' developed by chiropractors in the past 100 years. (See Schmitt & McCord article in this issue)

Conclusion

What we now know is that whatever the true case-fatality ratio (the number of people who die out of all those infected), more people need critical care simultaneously than our inadequately prepared health systems can handle, and that is what leads to more deaths. This is the true source

14. Richard A Hobday, John W Cason. The open-air treatment of pandemic influenza. Am J Public Health. 2009 Oct;99 Suppl 2(Suppl 2):S236-42.

15. Dancer RCA, Parekh D, Lax S, et al. Vitamin D deficiency contributes directly to the acute respiratory distress syndrome (ARDS). Thorax. 2015;70:617-24.

16. Cuthbert S, Walther DS, Rosner, AL, Force M. Applied Kinesiology: Clinical Techniques for Lower Body Dysfunctions. The Gangasas Press. Kindle Edition;2015:297.

of the crisis regardless of whether or not it turns out to be more or less lethal than influenza once the current crisis has passed from pandemic to endemic.

Improving the immune resilience of chiropractic patients around the world with preventative, anti-viral nutrition like vitamin D (as well as zinc and vitamin C) that strengthen the immune system is another way our profession will support the global fight against this pandemic.

With the world-wide increase in antibiotic- and vaccine-resistant strains of pathogenic microbes, the appeal of our integrative, multi-modal chiropractic approach to immune system impairments and enhancements will only increase.

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About the author

Scott Cuthbert, DC practices in the Philippines and is Associate Editor with the *Journal*. He has served on the Board of Directors of the *International College of Applied Kinesiology USA*. He is the author of three textbooks on applied kinesiology (in addition to 15 papers cited by Index Medicus, and over 50 peer-reviewed research papers) on applied kinesiology approaches to functional health problems.

Disclaimer

This paper was critically reviewed by two separate members of the *Editorial Board* and amended to reflect their advice.

Editor's note

Since Dr Cuthbert submitted this paper the Vitamin D question has taken some importance in Florida. The *Journal* offers [this link for you](#): *The Florida Surgeon-General has issued a statewide public service announcement in support of commonsense COVID prevention strategies such as optimizing your vitamin D, staying active, eating nutrient-dense foods and boosting your immune system with supplements such as vitamin C, quercetin and zinc*

