

STRENGTHENING RESILIENCE TO VIRAL THREATS: WITH PARTICULAR REFERENCE TO COVID-19

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ABSTRACT

At this time there is no proven effective treatment for Covid-19. Historically, a viral pandemic has led doctors and scientists to focus on finding an effective anti-viral drug or an effective vaccine. Neither of these have been particularly fruitful. It seems this focus is not in the right place especially given the propensity for viral mutations.

The innate and adaptive immune system is a marvel of complex engineering and it is generally acknowledged that a robust immune status will stand a person in good stead in the face of a viral threat. In this article, I discuss three natural, but scientifically validated ways, that the human immune system can be supported. I discuss the importance of Vitamin D as one of our best allies, how vitamin D deficiency has been shown to increase risk of ARDS, acute respiratory distress syndrome (the main complication of Covid-19 infection) and in the face of prevalent global deficiency of vitamin D (at least 70%), how this would naturally make many vulnerable, especially in the elderly, who are more commonly deficient. I then discuss the evidence for vitamin C effectiveness in treating viral infections, viral pneumonia and how science supports its use (it is NOT fake news as some would have us believe). I refer to the evidence that China has been using vitamin C in treatment and prevention in what seems their observed victory over Covid-19. Last, but not least I discuss another mineral, iodine, in which many of us are deficient but how there is evidence that this overlooked mineral is a powerful anti-viral and anti-microbial agent. In my discussion of these three, I refer to recommended doses that my colleagues should consider taking to protect themselves as they continue to battle Covid-19 in the front lines. These same doses that would not harm; rather may reduce risk of serious harm, in those taking them.

INTRODUCTION

The human immune system is a marvel of complexity and defends us against threats from our environment; both external and internal. It surveys and counters cancer cells and destroy viruses and bacteria that threaten us. For the most part, it will do this well if supported correctly by our lifestyle. Ageing and chronic disease is associated with reduced immune function but in these situations we don't have to be vulnerable.

We were not created with a vaccine deficiency or “anti-viral” medicine deficiency but we were created with innate and smart adaptive immune systems. Alas, modern medicine will often prioritise a “pharmaceutical solution” to a problem; ignoring the fact that a robust immune system can reduce our vulnerabilities. As a medical student, I was not taught the art of how to build the body’s defence against disease, nor how I could effectively prevent illness in my patients; this, I had to learn myself by diligent study and by learning from other doctors who had taken a functional approach to health.

This article focussed on just a few simple, evidence-based things, that are potential game-changers in our fight against any viral threat, including Covid-19.

I have nothing to gain by putting this article out there. My motivation is to help, in hopefully a significant way, my fellow travellers in life; my fellow-doctors in the “Covid trenches” as well as everyone else. The advice I give here I practice myself and have shared it with all my family members in the hope that they will action this advice too; for their own good.

I am perturbed by the stories that I am hearing from doctor colleagues who are forced into the front-line of treating patients who have become ill with Covid-19, without any advice on how they might protect themselves internally as well as externally from attack. As I write this (30th March 2020) at least 50 doctors have died from COVID-19 in Italy and 10,000 Spanish healthcare professionals are reported to have been infected, following concerns over shortages of personal protection equipment (PPE).

I repeat – a robust immune system will be our best defence against this virus. I am hoping and praying that you will not take this advice lightly.

I would first like to talk about vitamin D; a hormone that we are supposed to produce from the action of sunlight on cholesterol under the skin. Many have overlooked how powerful an ally this molecule is in supporting our immunity and our defence against a multitude of diseases.

VITAMIN D

I underline several of the actions of vitamin D that are perhaps most relevant to our defence against viruses.

Much of the following information on Vitamin D is taken from an article that I first wrote in 2012 “Vitamin D: An under-estimated ally”. This article is available as a downloadable pdf from my website for those who would like to read more. https://thenaturaldoctor.org/wp-content/uploads/2020/03/Vitamin-D-Article-Dr-Eccles-2012_compressed.pdf

This article is focussed specifically on the role that Vitamin D plays in helping the immune system to function well.

Vitamin D is one of the fat soluble vitamins (e.g. A, D, E, K). There are two main forms of the vitamin: D2 (ergocalciferol) and D3 (cholecalciferol). Ultraviolet B (UVB 315 nm–280 nm) rays in sunlight will increase D3 levels. A light-skinned person will synthesize 20,000 IU (international units) of vitamin D in 20 minutes sunbathing on a beach. White skin, with less melanin, synthesizes vitamin D in sunlight six times faster than dark skin. This has allowed lighter skinned people to migrate to higher latitudes, populate Europe, Asia, and North America, and be able to make enough vitamin D to survive. The majority of the world's population now lives above latitude 35°N and is unable to synthesize vitamin D from sunlight for a period of time in winter owing to the angle of the sun.

Vitamin D is best known for its ability to prevent Rickets, a softening and bending of bones in children, first described in 1651; an example of a nutritionally-specific disease. It reached epidemic proportions following the industrial revolution, which began in the 1750s. In the 19th century, before the importance of exposing children to sunlight was recognized; it is due to vitamin D deficiency. The adult form is called Osteomalacia.

It has been mis-named a vitamin. Vitamin D acts as a steroid hormone. The body makes vitamin D from cholesterol through a process triggered by the action of the sun's ultraviolet B rays on the skin. Vitamin D3 is synthesized from cholesterol in the skin. The vitamin D binding protein transports the vitamin D3 to the liver where it undergoes change to 25(OH)D (the inactive form of vitamin D) and then to the kidneys where it is changed again to 1,25(OH)D, its active form (Brannon et al, 2008). This same enzyme that activates Vitamin D is also present in a variety of non-kidney sites, including bone, skin, colon, brain, and macrophages (white cells, critical to immune defence). This is likely to explain the far greater and broad-ranging effects of vitamin D that we have discovered in recent years. Furthermore, Vitamin D receptors are found in virtually all tissues and cells. Compared to the 1970's nine times more target organs are recognised for vitamin D.

The half-life of vitamin D in the liver is approximately 3 weeks, which underscores the need for frequent replenishment of the body's supply.

The vitamin D hormone system controls the expression of more than 2000 genes and the proteins they produce.

In many Countries there exists unrecognised inadequacy. The amount the skin can produce decreases linearly from age 20's (It will have decreased by 75% by age 70). Vitamin D level predicts performance in older people and of importance in this discussion is how this may make the elderly more vulnerable to a multitude of diseases, including viral threat . Epidemiological studies suggest that vitamin D reduces incidence of diabetes, rheumatoid arthritis, multiple sclerosis, viral infection, auto-immune disease and cancer. It leads to a significant reduction in all-cause mortality when supplemented.

Fatty fish (catfish, salmon, mackerel, sardines, tuna), mushrooms, eggs and meat are rich in D, as well as foods specifically fortified with D. Vitamin D is essential for the proper absorption

of calcium and phosphate; explaining vitamin D's critical role in bone health. However, no dietary source for "The Sunshine Vitamin" even comes close to vitamin D levels made naturally from ultraviolet light B exposure.

An estimated 1 billion people worldwide, across all ethnicities and age groups, have a vitamin D deficiency. This is mostly attributable to people getting less sun exposure because of climate, lifestyle, and concerns about skin cancer. The Dietary Reference Intake (DRI) values for vitamin D, established in 1997 were initially established to prevent rickets and osteomalacia, but are now considered too low to prevent chronic disease (and for that matter to impact significantly on the immune system). Subtle symptoms of milder deficiency include loss of appetite, diarrhoea, insomnia, vision problems, and a burning sensation in the mouth and throat.

Seventy seven percent of Americans, 97 percent of black Americans and 97 percent of Canadians are vitamin D deficient, according to government data. This includes people living in sunny climates and athletes who spend lots of time outside. The vitamin D research community now recommends vitamin D blood levels of 40-60 ng/ml (that is 100- 150 nmol/l); and most are well below this.

Obesity is linked with lower levels of Vitamin D with an inverse correlation between levels and degree of overweight. A study suggests that people who are obese may be less able to convert vitamin D into its hormonally active form (Wortsman et al, 2000).

As the body gets older, the skin loses its ability to convert sunshine into vitamin D. And there is evidence that children aren't getting enough of it. Infants generally aren't sunbathers, and breast milk alone won't provide sufficient levels.

With such a high prevalence of vitamin D deficiency, the Endocrine Society recommends that everyone at risk should be screened for vitamin D deficiency. Those especially at risk are infants and children (all ages), pregnant women, those who are over 65 and in community dwellings (without enough sunlight), darker skinned individuals and obese individuals. Their recommendations are for doses of 1,000 to 2,000 IU to achieve appropriate levels, with maximum levels of 10,000 IU per day. **In my experience 4 to 5,000 IU of Vitamin D3 has gotten most people's vitamin D into the optimal range above 100 nmol/l (> 40ng/ml).**

Vitamin D's reported mechanisms of action include preventing DNA breaks, cell cycle control, decreased proliferation of normal and abnormal cells, encouraging cells to a more differentiated state, enhancing cell communication, being anti-inflammatory, antioxidant and immuno-modulatory as well as anti-angiogenic (preventing new blood cell formation).

Vitamin D has also been found to enhance production of endogenous antibiotics (defensins).

I am pretty sure that we are not testing blood levels of people affected by Covid-19 but we should be given the information given below. Supplementing Vitamin D where levels are deficient or insufficient may prove a critical action. In my clinical experience 70% or more of

people who attend my clinic (and every patient gets their Vitamin D measured) have insufficient or deficient levels of Vitamin D. This has been found in people who can afford private medicine and holidays in the sun. I suspect in the general population the figure is higher than 70%.

So, let's reiterate why this is vital from a Covid 19 perspective.

EVIDENCE THAT VITAMIN D CAN PREVENT VIRAL INFECTION

While there are no clinical trials investigating vitamin D for Covid-19 specifically, there is much data showing that vitamin D is an important component in the prevention and treatment of influenza (Schwalfenberg, 2015) and upper respiratory tract infections (Yamshchikov et al, 2009) and in reducing risk of ARDS (the main cause of mortality in Covid-19 infections).

Vitamin D deficiency is common in people with ARDS; the main cause of deaths from Covid19, and in fact studies show that vitamin D deficiency may contribute directly to ARDS (Eastly, 2016, Dancer et al, 2015).

[https://www.jem-journal.com/article/S0736-4679\(16\)00026-3/pdf](https://www.jem-journal.com/article/S0736-4679(16)00026-3/pdf)

Vitamin D deficiency is associated with an increased risk of intensive care admission and mortality in patients with pneumonia (Remmelts et al, 2012). Deficiency is common in critically ill patients and associated with adverse outcome (Parekh et al, 2013).

Recent data from an Austrian study in critically ill deficient patients suggests that when treatment with vitamin D is successful in raising levels >75 nmol/L there is a mortality benefit (Amrein et al, 2014).

Vitamin D may improve outcomes by reducing both local and systemic inflammatory responses as a result of modulating cytokine responses (Kempker et al, 2012).

The above data alone should have firmly grabbed our attention but other evidence also supports a role for Vitamin D as a critical protective molecule.

- Oregon State University scientists found vitamin D induces the production of cathelicidin, an anti-microbial peptide gene that helps serve as the first line of defense in the immune response against minor wounds, cuts, and both bacterial and viral infections.
- Vitamin D-expressed genes instruct macrophages, the front-line defenders in the innate immune system, to make antimicrobial peptides, which are like antibiotics (Liu, 2006).
- In a Japanese randomized, controlled trial, children given a daily vitamin D supplement of 1,200 IU had a 40% lower rate of Influenza Type A compared with those given placebo; there was no significant difference in rates of influenza type B. (Gombart, 2009).
- A six-fold lowered risk of respiratory syncytial virus (RSV) in Vitamin D deficient infants has been observed. (Belderbos et al, 2011)

Whilst vitamin D is not an anti-viral molecule, it augments immune function, allowing the body to combat the virus more effectively (Lang & Aspinall, 2017). It also suppresses inflammatory processes (Gruber-Bzura, 2018).

A robust immune function is required for the body to combat the virus, but an over-activated immune system is also responsible for the cytokine storm that is seen in COVID-19 infection that can lead to death.

One hypothesis is that the seasonality of the flu is related to the fact that most people have lower vitamin D levels in the winter than in the summer.

Research published in 2009 suggests fatality rates during the 1918-1919 influenza pandemic were influenced by season, with greater numbers of people dying during the winter than the summer (Grant & Giovannucci, 2009).

A meta-analysis of 25 randomized controlled trials showed that vitamin D supplementation helps protect against acute respiratory infections. Studies have also shown that there is an association between low vitamin D levels and susceptibility to viral infections such as influenza (Martineau et al, 2017). This 2017 meta-analysis also reported from analysis of the 11,000 participants, that it was the daily or weekly supplementation of vitamin D that had the greatest protective effect in those with the lowest vitamin D levels (Medcram Medical Lectures, 2020), cutting risk of respiratory infection by 50% (i.e. halving the risk). The study was funded by British National Institute of Health and published in the British Medical Journal (BMJ). To repeat, those with severe vitamin D deficiency who took a daily or weekly supplement cut their respiratory infection risk in half. Those with higher baseline levels also lowered their risk, albeit to a lesser extent. The acute administration of high bolus doses of vitamin D, on the other hand, had no significant impact on infection risk.

EFFECTIVE BLOOD LEVELS AND DOSES

This information above would very much support the recommendation to maintain an optimal vitamin D level all year-round. According to data from GrassrootsHealth's D*Action studies, the optimal level for health and disease prevention appears to be between 60 nanograms per milliliter (ng/ml) and 80 ng/ml (150 nmol/l to 200 nmol/l), while the cut off for sufficiency appears to be around 40 ng/ml (100 nmol/l).

In one GrassrootsHealth analysis, those with a vitamin D level of at least 40 ng/ml (100 nmol/l) reduced their risk of colds by 15% and flu by 41%, compared to those with a level below 20 ng/ml. <https://www.grassrootshealth.net/document/vitamin-d-reduces-colds-flu/>

Experts say that adequate levels of vitamin D would be achieved by 15 minutes of unfiltered sun two to three times weekly, depending on your skin type and the time of day. Arms and legs should be exposed, whilst still protecting the face.

The Endocrine Society and the International Osteoporosis Foundation, note that 30 ng/ml is necessary for optimal bone health.

The two forms of vitamin D used in supplements are D2 (ergocalciferol) and D3 (cholecalciferol). D3 is the preferred form, as it is chemically similar to the form of vitamin D produced by the body and is more effective than D2 at raising the blood concentration of vitamin D (D3 (cholecalciferol), the kind our skin makes, and vitamin D2 (ergocalciferol), a synthetic variant made by irradiating plants. Vitamin D2 is only 10–30% as effective in raising 25-hydroxyvitamin D blood levels compared to vitamin D3). Without sun exposure, to reach a level of 50 ng/ml (125 nmol/l) requires a 5,000 IU/day vitamin D supplement. This is certainly borne out by my own clinical experience with Vitamin D3 supplementation. Vitamin D3 should be the choice for oral supplementation of Vitamin D.

Some feel that Vitamin D intoxication can occur when serum levels are greater than 150 ng/ml. Symptoms of hypervitaminosis D include fatigue, nausea, vomiting, and weakness probably caused by the resultant hypocalcaemia. Taking Vitamin D3 together with vitamin K2 negates this risk (see later comments).

Current recommended daily vitamin D intake of 200 IU (international units) for those up to age 50; 400 IU for people 51 to70; and 600 IU for those over 70 are now deemed by most experts to be too low. Many experts say 2,000 IU of the vitamin may be optimal for preventing disease. Anthony W. Norman, a professor of biochemistry and biomedical sciences at the University of California, Riverside, who has been studying vitamin D for five decades recommends 2,000 to 4,000 IUs per day and says doctors are behind the times on research.

It is good practice if regular Vitamin D3 is being taken on a long-term basis to consider keeping a check on blood levels.

Research suggesting a protective role for vitamin D against non-bone-related disease is “compelling” even if it is not conclusive. Leading vitamin D experts have stated. “We won't know the true burden of chronic disease until we eradicate vitamin D deficiency.”

As the number of positive effects of vitamin D on the body, as highlighted above, continue to be uncovered, the weight of circumstantial evidence would certainly support checking one's own levels particularly if sun exposure is not an option because of where you live.

The guidelines between for intakes of Vitamin D in the range 400-800IU are directed towards maintaining bone health and are sufficient to prevent rickets and osteomalacia – but not other diseases or influenza. Without evidence to support it, the US Food and Nutrition Board arbitrarily set the safe upper limit for vitamin D consumption at 2,000 IU/day.

10,000 IU vitamin D supplement every day, month after month safely, with no evidence of adverse effect. (Veith,1999)

Vitamin D in dose (5,000 IU/day) prevents the build-up of calcium in blood vessels. (Watson et al, 1997).

The cost of taking a 5,000 IU supplement of vitamin D every day for a year is cheap. Not taking it may turn out to be far more expensive!

Based on all the above that demonstrates that Vitamin D has immune support benefits on the host and on the consensus of expert opinion, it seems prudent to recommend that a person takes 4 to 5,000IU per day of Vitamin D3. This should be combined with Vitamin K2 (250 mcg to 500mcg). The latter will prevent any “rogue” calcification of tissues other than bone (for more explanation on this, I refer to my previous article “Vitamin D3 and K2: Another Dynamic Duo!” https://thenaturaldoctor.org/wp-content/uploads/2020/03/K2-ARTICLE-1_compressed.pdf)

The potential benefits of doing this are highly likely to outweigh the risks of not doing it. I have many patients taking the above doses of Vitamin D3 and K2 and have been doing so without untoward effect for many years.

VITAMIN C

We have known about Vitamin C since the 1930’s. It was discovered by Nobel prize winner Albert Szent-Gyorgyi in 1937 and it became popularised by Linus Pauling.

My purpose here is not to write extensively about Vitamin C but to highlight what we know about it that makes it vital to the current discussion about Covid-19.

When one reads the book “Curing the Incurable. Vitamin C, Infectious Diseases, and Toxins.” by Thomas Levi MD (2002), with its 1200 scientific references, one appreciates the weight of evidence for the very broad anti-viral effect of Vitamin C. Having read this book it left me thinking that “there seems to be no virus that has been able to survive it”.

Here are some of the highlights of published research on Vitamin C from a “Covid-angle”.

- Vitamin C use as an anti-viral agent is not unproven; it has been used thus since the 1930’s (Levy, 2002)
- Much evidence supports the enhanced recovery of patients with pneumonia by Vitamin C. <http://orthomolecular.org/resources/omns/v16n15.shtml>
- Vitamin C is already being used to prevent and treat COVID-19 in China and in Korea. <http://orthomolecular.org/resources/omns/v16n16.shtml>
- High dose intravenous vitamin C has been used successfully in treating Covid-19.
- <http://orthomolecular.activehosted.com/index.php?action=social&chash=0a09c8844ba8f0936c20bd791130d6b6.148&s=b002462225cc2dcfd746574957c0b503>
- “Vitamin C (small or large dose) does no harm to people and is the one of the few, if not the only, agent that has a chance to prevent us from getting, and can treat, COVID-19 infection. When can we, medical doctors and scientists, put patients’ lives first?” Richard Z. Cheng, MD, PhD, International Vitamin C China Epidemic Medical Support Team Leader <http://orthomolecular.org/resources/omns/v16n15.shtml>
- The government of Shanghai, China has announced its official recommendation that COVID-19 should be treated with high amounts of intravenous vitamin C. (1) Dosage recommendations vary with severity of illness, from 50 to 200 milligrams per kilogram body weight per day to as much as 200 mg/kg/day. <http://orthomolecular.org/resources/omns/v16n16.shtml>

- Dr Andrew Weber, a New York Lung Specialist reports on the efficacy of using high dose intravenous vitamin C in the treatment of Covid-19 <https://www.dailymail.co.uk/news/article-8149191/New-York-hospitals-treating-corona-patients-6000-milligrams-VITAMIN-C.html>
- One of the complications of Covid-19 infection is the ARDS (acute respiratory distress syndrome) that it can lead to. ARDS seems to be triggered by free radical oxidative stress and cytokine release that leads to inflammation in the delicate lung air sacs or alveoli (Fowler et al, 2017) Vitamin C is known to counter oxidative stress
- Large dose intravenous vitamin C (IVC) has been used clinically successfully in viral ARDS and also in influenza. <https://isom.ca/article/high-dose-vitamin-c-influenza-case-report/?from=groupmessage&isappinstalled=0>
- In a 2019 meta-analysis of 18 clinical studies Vitamin C was shown to shorten ICU stay with a total of 2004 ICU patients (Hemila & Chalker, 2019).
- In meta-analyses intravenous (IV) high-dose vitamin C has been demonstrated to have significant benefits in the treatment of sepsis and septic shock (Li, 2018; Wang et al, 2019).

Based on all of the above evidence and based on the non-toxicity of Vitamin C (some may have diarrhoea from large doses), I recommend people consider taking 4 grams a day of Vitamin C (ascorbic acid). I would increase that dose to twice a day in the event of symptoms and in particular where these are being managed from home during self -isolation. Apart from loose stool there are no other apparent downsides to doing this and more than likely upsides. I have many patients who take this dose with no ill effect at all.

IODINE

Lastly, in brief I would like to mention another common deficiency that we suffer in the West that may lead to increased vulnerability to infections.

Before the surge of pharmaceutical medicine many Physicians used iodine to treat a variety of ills. The Nobel laureate Dr. Albert Szent Györgyi (1893—1986), yes the same physician who discovered vitamin C, writes: "When I was a medical student, iodine in the form of potassium iodide was the universal medicine. Nobody knew what it did, but it did something and did something good. We students used to sum up the situation in this little rhyme:

If ye don't know where, what, and why Prescribe ye then K and I"

Iodine deficiency now affects approximately 50% of Europe. It has many actions in addition to supporting the thyroid gland. These include it being anti-oxidant, anti-inflammatory, a protector of breast and ovary health and of pertinence here, it is a potent anti-microbial, anti-fungal and anti-viral agent. Furthermore, the prevalence of bromide and fluoride in the environment, which act as an iodine inhibitors, has likely exacerbated the common-place iodine deficiency.

"Iodo-phobia" has arisen in medicine over use of iodine and that it may potentially upset the thyroid; but this is not borne out in practice. The Japanese regularly take in around 13mg of

iodine in their daily diet without it causing trouble. This is way above the RDA for iodine (RDA: 50mcg daily for infants 0-12 months; 90mcg daily for 1-8 years; 120mcg daily for 9-13 years; 150mcg daily for 14-18 years. Adequate Intake (AI) for infants:110mcg daily for ages 0-6 months; 130mcg daily for 7-12 months. Tolerable Upper Intake Levels (UL): 200mcg/day for ages 1-3 years; 300mcg/day for 4-8 years; 600mcg/day for 9-13 years; 900mcg/day for 14-18 years (including pregnancy and lactation).

It was standard practice to give high doses of iodine for Graves' disease prior to thyroidectomy and no serious side effects were noticed (Pennington, 1990).

Iodine has been used in various forms as an antiseptic for the skin, wounds, and mucous surfaces of the body. It has also been used to sterilize the air and inanimate objects such as catgut and surgical instruments.

As stated above, iodine kills bacteria, viruses (Gershenfield, 1977, Reddish, 1957), fungi, protozoa, and even spores of bacteria and fungi, including anthrax spores. Iodine has been used successfully against influenza, herpes, small pox, and chicken pox viruses (Gershenfield, 1977).

Iodine in the blood is captured by many tissue sites and ends up in mucous secretions. The tissues include thyroid and salivary glands, nasal secretions, stomach, and lungs. Collectively, these tissues and mucous products contain free iodine which defends against invasion by bacteria and viruses (Brown-Grant, 1961, Derry, 2001). The salivary glands, nasal mucosa, and lungs all secrete mucous which contains iodine (Brown-Grant, 1961).

The current recommended iodine intake by the WHO is 150 to 200 micrograms daily. This dose first started by David Marine in 1920 has successfully prevented goiters, cretinism, and mental retardation. Dietary iodine found in iodized salt is below the amounts needed to fill mucous defence roles. People wishing to boost their defence against infections should consider supplementing their diets with iodine.

When daily iodine dose is above 3 mg (Kelly, 1961) for over 2 weeks, the thyroid gland becomes saturated and no longer takes up much iodine (Wayne et al, 1964). Then, iodine goes to other sites named above and is excreted into the upper respiratory and gastrointestinal tract mucus. It seems logical that air borne viruses become stuck in mucus and killed by free iodine (Brown-Grant, 1961).

Lugol's iodine solution was discovered by Henri Lugol, a Paris physician, more than 150 [21] years ago. It has been used therapeutically since then. Lugol's consists of 5% free iodine and 10% potassium iodide in water. Lugol's has a distinct advantage over most other iodine oral medications by having a high level of free iodine, which is the active ingredient that kills viruses (Carrol et al, 1955; Carroll, 1955; Gottardi, 1991).

Consensus from iodine experts is that the sicker the patient the more iodine they need with most average patients needing 25 to 50 mgs with 12 mg being a good maintenance dose depending on ones' location.

In summary, iodine is another nutrient with anti-viral properties, that is likely to make those deficient in it to be more vulnerable to viral infection. It is prudent in the current circumstances therefore, to consider adding 12mg (i.e. 1 drop of 12% Lugol's iodine) to our daily defence against Covid-19. Again, I and many other physicians who recommend iodine at these doses (above the RDA) have done so without the observation of any untoward effects over many years of use.

As a final note, despite the evidence cited above many will still say there is no evidence to support the recommendations that I make or they will imply that these recommendations are associated with some unsubstantiated risk to health. Those who are not informed enough or have vested interests will always be around to try to suppress any view that counters the common narrative. The point is there is NO CURRENT TREATMENT for Covid-19 and if what I have suggested here gives people and my doctor-colleagues an edge against this virus in the absence of harm, then what is there to lose?

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