

“A number of vitamins (A, B6, B12, folate, C, D and E) and trace elements (zinc, copper, selenium, iron) have been demonstrated to have key roles in supporting the human immune system and reducing risk of infections. - Other essential nutrients including other vitamins and trace elements, amino acids and fatty acids are also important.”

Prof. Philip C. Calder, BSc (Hons)
PhD, DPhil, RNutr, FRSB, FAFN
Professor of Nutritional Immunology
Head of Human Development & Health
University of Southampton - UK

“I am glad to know that our preliminary research findings would adequately substantiate your purpose. I really appreciate your effort in showcasing the novel outcomes of recent research work that would be highly beneficial to the society in this pandemic scenario.”

Dr. Sivaraman Dhanasekaran, PhD
Sathyabama Institute of Science and Technology
Sathyabama University - India

“As this review illustrates, there are innumerable potentially useful medicinal plants and herbs waiting to be evaluated and exploited for therapeutic applications against genetically and functionally diverse virus families.”

Sabah A.A. Jassim & M.A. Naji - writing in
Journal of Applied Microbiology

“I am very happy to be a part of this wonderful work which I like so much.”

Professor Yusuf Hagag, PhD
Dept. of Pharmaceutical Technology,
Tanta University - Egypt

“We truly appreciate your kind effort in sharing this interesting and enormous work to us. We believe it is of great help to the medical community as the corona pandemic continues to treat the globe.”

Professor Shilin Chen, PhD

Director of WHO Regional Office - China
The Institute of Medicinal Plant Development
China Academy of Chinese Medical Sciences

“Follow a healthy eating pattern across the lifespan. All food and beverage choices matter. Choose a healthy pattern at an appropriate calorie level to help achieve and maintain a healthy body weight, support nutrient adequacy and reduce the risk of chronic disease.”

United States Department of Agriculture (USDA) -
Dietary Guidelines for Americans 2015-2020 [8th Ed.]

“We can no longer rely on many of the larger health authorities to make an honest examination of the medical and scientific evidence.”

Professor Paul E. Marik, MBBCh, M.Med, BSc Hons, PhD
Chair of the Division of Pulmonary & Critical Care Medicine
- *Eastern Virginia Medical School, Norfolk, VA*

“Zinc deficiency can probably be added to the factors predisposing individuals to infection and detrimental progression of COVID-19. Finally, due to its direct anti-viral properties, it can be assumed that zinc administration is beneficial for most of the population.”

Inga Wessels, Benjamin Rolles & Lothar Rink -
writing in Frontiers in Immunology

“I quite agree with your idea of improving immunity through diet, [...] the necessity of having adequate nutritional status for a sufficient response to the COVID vaccine.”

Professor Margaret Rayman,
BSc, DPhil (Oxon), RNutr.
Surrey Distinguished Chair
Professor of Nutritional Medicine
University of Surrey - UK

“The training of all health professionals (including physicians, nurses, dentists and nutritionists) should include diet, nutrition and physical activity as key determinants of medical and dental health. - The social, economic, cultural and psychological determinants of dietary and physical activity choice should be included as integral elements of public health action.”

World Health Organization [WHO] - Diet Nutrition
and the Prevention of Chronic Diseases (2003)

“Thank you for your interest and collaboration. We are running a study with COVID 19 patients and omega 3 fatty acids. It will take some time until we have the results.”

Professor Inar Castro, PhD
Professor of Food Science & Nutrition
University of São Paulo - Brazil

“Foods with antiviral properties include fruits, vegetables, fermented foods and probiotics, olive oil, fish, nuts and seeds, herbs, roots, fungi, amino acids, peptides, and cyclotides.”

Dr. Ahmad Alkhatib -
writing in Nutrients

“Current literature provides obvious evidence supporting dietary therapy and herbal medicine as potential effective antivirals against SARS-CoV-2 and as preventive agents against COVID-19. Thus, dietary therapy and herbal medicine could be a complementary preventive therapy for COVID-19.”

Suraphan Panyod, Chi-Tang Ho & Lee-Yan Sheena
- writing in British Medical Journal Nutrition

“Congratulations for the ‘Anti-Viral Diet Research Project’. Focusing on diet is an interesting idea in terms of counter-ing viral threats and maximizing our immune system’s ability to fight off viruses and viral diseases.”

Professor Majid Dadmehr, MD, PhD
School of Persian Medicine, Iran University
of Medical Sciences, Tehran - Iran

“Individuals should aim to meet their nutrient needs through healthy eating patterns that include nutrient-dense foods. Foods in nutrient-dense forms contain essential vitamins and minerals and also dietary fiber and other naturally occurring substances that may have positive health effects.”

United States Department of Agriculture (USDA) -
Dietary Guidelines for Americans 2015-2020 [8th Ed.]

“There is evidence that Vitamin C and Quercetin co-administration exerts a synergistic antiviral action due to overlapping antiviral and immunomodulatory properties and the capacity of ascorbate to recycle quercetin, increasing its efficacy.”

**Ruben Manuel Luciano Colunga Biancatelli, Max Berrill,
John D. Catravas & Paul E. Marik** - writing in
Frontiers in Immunology

“You may be interested in other papers from our group that have found (in a limited number of patients) that foods can interact very quickly (1-2 minutes) with some of the COVID-19 symptoms.”

Professor Jean Bousquet, MD, PhD

Honorary Professor of Pulmonary Medicine

Montpellier University - France

Former Chair of GINA (Global Initiative for Asthma), ARIA & the WHO Global Alliance against Chronic Respiratory Diseases

“Our findings suggest that vitamin D deficiency may partly explain the geographic variations in the reported case fatality rate of COVID-19, implying that supplementation with vitamin D may reduce the mortality from this pandemic.”

Paul E. Marik, Pierre Kory & Joseph Varon - writing in
Journal of the Academy of Nutrition and Dietetics

“Eat plenty of vegetables and fruit: They are important sources of vitamins, minerals, dietary fibre, plant protein and antioxidants. People with diets rich in vegetables and fruit have a significantly lower risk of obesity, heart disease, stroke, diabetes and certain types of cancer.”

World Health Organization [WHO] - Diet Nutrition and the Prevention of Chronic Diseases (2003)

“Thank you for this. You have done a wonderful job of pulling all this info together.”

Prof. Philip C. Calder, BSc (Hons),

PhD, DPhil, RNutr, FRSB, FAFN

Professor of Nutritional Immunology

Head of Human Development & Health

University of Southampton - UK

“Adequate intakes of micronutrients are required for the immune system to function efficiently. Micronutrient deficiency suppresses immunity by affecting innate, T cell mediated and adaptive antibody responses, leading to dysregulation of the balanced host response. This situation increases susceptibility to infections, with increased morbidity and mortality.”

Silvia Maggini, Eva S. Wintergerst, Stephen Beveridge & Dietrich H. Hornig - writing in British Journal of Nutrition

“Just an amazing way to learn about how to protect yourself from viruses. Really helpful and informative. A massive help in my understanding of them.”

Elsbeth Carruthers - Online Review

“Functional foods and nutraceuticals within popular diets contain immune-boosting nutraceuticals, polyphenols, terpenoids, flavonoids, alkaloids, sterols, pigments, unsaturated fatty-acids, micronutrient vitamins and minerals, including vitamin A, B6, B12, C, D, E, and folate, and trace elements, including zinc, iron, selenium, magnesium, and copper.”

Dr. Ahmad Alkhatib -
writing in Nutrients

“This is not just a public health crisis, it is a crisis that will touch every sector - so every sector and every individual must be involved in the fight... I remind all countries that we are calling you to activate and scale up your emergency response mechanisms.”

Dr. Tedros Adhanom Ghebreyesus (March 11th 2020) -
Director General of the **World Health Organization [WHO]**

“Several antiviral bioproducts have already been described by the[ir] activity against Dengue Virus, Coronavirus, Enterovirus, Hepatitis B, Influenza Virus and HIV. Thus, bioproducts could be friends in the fight against SARS-CoV-2.”

Ananda da Silva Antonio, Larissa Silveira Moreira Wiedemann & Valdir Florêncio Veiga-Junior - writing in Royal Society of Chemistry Advances

“I will use those dietary regimens which will benefit my patients according to my greatest ability and judgment.”

Hippocrates of Kos (460-370 BC)
The Physician's Oath

“Vitamins and minerals, often referred to as micronutrients, are critical for several important bodily functions. Vitamins and minerals are not produced in the body, with the exception of vitamin D. Instead, they are consumed through food or supplements.”

Centers for Disease Control and Prevention [CDC] - About Micronutrients (2020)

“Many thanks for your kind mail and appreciation of our research work. We are happy and thankful to you for citing our article in your report and review. [...] This article has been accepted in ‘Scientific Reports’ and will be available online shortly.”

Professor Jagdishwar Dandapat, PhD
Department of Biotechnology
Utkal University - India

“The theory of an ‘anti-viral diet’ could just be one of the most significant ideas to emerge within the past half-century of Food Science - certainly in terms of benefits it may bring in the long-term.”

Dr. Ewald Oersted

The Academy of the Third Millennium (A3M)
London - England

“Nutrition may therefore play a role in the immune defense against COVID-19 and may explain some of the differences seen in COVID-19 across Europe.”

Prof. Jean Bousquet *et alia* - writing in
Clinical and Translational Allergy

“It would seem prudent for individuals to consume sufficient amounts of essential nutrients to support their immune system to help them deal with pathogens should they become infected. The gut microbiota plays a role in educating and regulating the immune system, Gut dysbiosis is a feature of disease including many infectious diseases and has been described in COVID-19.”

**Prof. Philip C. Calder, BSc (Hons),
PhD, DPhil, RNutr, FRSB, FAFN**
Professor of Nutritional Immunology
Head of Human Development & Health
University of Southampton - UK

“The immune system has often been shown to be weakened by inadequate nutrition in many model systems as well as in human studies, Therefore we propose to verify the nutritional status of COVID-19 infected patients.”

Lei Zhang & Yunhui Liu - writing in
Journal of Medical Virology

“A cause and effect relationship between micro-nutrient status and vaccine responsiveness has been demonstrated through randomised, controlled trials. Such trials in older people have shown better responses to vaccination after an intervention.”

Professor Margaret Rayman
BSc, DPhil (Oxon), RNutr.
Surrey Distinguished Chair
Professor of Nutritional Medicine
University of Surrey - UK

“When modern life led to eating reduced amounts of fermented foods, the microbiome drastically changed and this may have facilitated SARS-CoV-2 to spread or to be more severe.”

Professor Jean Bousquet, MD, PhD
Honorary Professor of Pulmonary Medicine
Montpellier University - France
Former Chair of GINA (Global Initiative for Asthma), ARIA &
the WHO Global Alliance against Chronic Respiratory Diseases

“Really useful to see all of the references to the many studies that have been done on this subject. Would highly recommend reading this.”

James Heesom - Online Review

“Within the nutrition sector a promising body of evidence studying inter-relationships between certain nutrients and immune competence already exists. This could potentially be an important player in helping the body to deal with the Coronavirus.”

Emma Derbyshire & Joanne Delange -
writing in British Medical Journal Nutrition

“All the studied molecules could bind to the active site of the SARS-CoV-2 protease, out of which rutin (a natural compound) has the highest inhibitor efficiency among the 33 molecules studied.”

Sourav Das, Sharat Sarmah, Sona Lyndem & Atanu Singha Roy - writing in Journal of Biomelecular Structure and Mechanics

“Congratulations for such a big work.”

Dr. Colunga Biancatelli Ruben Manuel Luciano
Postdoctoral Research Associate
Old Dominion University - Norfolk, VA

“The World Health Organization (WHO) considers the Natural and Traditional Medicine, which includes treatment with medicinal plants, as the most natural, safe, effective, and affordable medicine. The use of medicinal plants for respiratory conditions has also been reported in various parts of the world from China, India, Saudi Arabia to Mexico and Ecuador.”

Magaly Villena-Tejada, Ingrid Vera-Ferchau, Anahí Cardona-Rivero, Rina Zamalloa-Cornejo, Maritza Quispe-Florez, Zany Frisancho-Triveño, Rosario C. Abarca-Meléndez, Susan G. Alvarez-Sucari, Christian R. Mejia & Jaime A. Yañez - writing in PLoS One

“An ‘Anti-Viral Diet’ is a diet whose primary purpose is to counteract viral threats and to optimize the ability of our immune systems to fight off both viruses and viral diseases.”

Edouard d’Araille, Project Lead
AVD : The Anti-Viral Diet - Phase I

“Our study found that the prevalence of malnutrition among patients admitted to hospital due to an infection caused by the novel coronavirus SARS-CoV-2 was relevant. What is more, the presence of a poor nutritional status was related to a longer stay in hospital, a greater admission in the ICU and a higher mortality.”

Joana Nicolau, Luisa Ayala, Pilar Sanchís, Josefina Olivares, Keyla Dotres, Ana-Gloria Soler, Irene Rodríguez, Luis-Alberto Gómez & Lluís Masmiquel
- writing in Clinical Nutrition ESPEN

“I just visited your book of ‘AVD’ and it looks really interesting and when I came to know that our article by some means was helpful to you it motivates us more and more to contribute something. Our team will support in any format if required.”

Dr. K.C. Vasanthakumar, PhD
Winomicx Molecular Diagnostics and Research Ltd.
Tamil Nadu - India

“The nutrition research community has a responsibility to step up our research on nutrition and COVID-19 so that policy makers, and those who design and deliver clinical and public health services, have the best possible evidence on which to base their decisions.”

Dr. John C. Mathers - writing in
British Journal of Nutrition

“Some nutrients are consumed by many individuals in amounts below the Estimated Average Requirement or Adequate Intake levels. These include potassium, dietary fiber, choline, magnesium, calcium, and vitamins A, D, E, and C. Iron also is under-consumed by adolescent girls and women ages 19 to 50 years.”

**United States Department of Agriculture (USDA) -
Dietary Guidelines for Americans 2015-2020 [8th Ed.]**

“The present review highlights the importance of food choices considering their inflammatory effects, consequently increasing the viral susceptibility observed in malnutrition and obesity. Healthy eating habits, micronutrients, bioactive compounds and probiotics are strategies for COVID-19 prevention. Therefore, a diversified and balanced diet can contribute to the improvement of the immune response to viral infections such as COVID-19.”

Ana Heloneida de Araújo Morais, Jailane de Souza Aquino, Juliana Kelly da Silva-Maia, Sancha Helena de Lima Vale, Bruna Leal Lima Maciel & Thaís Sousa Passos
- writing in British Journal of Nutrition

*“Congratulations on your new book ‘AVD’.
From what I have seen, you have
created a masterpiece.”*

Doctor David Steenblock - Online Review

“Based on the results, we report that stilbene-based compounds in general and resveratrol, in particular, can be promising anti-COVID-19 drug candidates acting through disruption of the spike protein. Our findings in this study are promising and call for further in vitro and in vivo testing.”

H.M. Wahedi, S. Ahmad & S.W. Abbasi - writing in
Journal of Biomolecular Structure and Dynamics

“We are striving for a COVID-19 treatment that can be quickly produced and easily distributed. Natural products could provide an answer to this dilemma, as they often have low toxicity and are used in the pharmaceutical industry for their bioactivity, including antiviral.”

Ananda da Silva Antonio, Larissa Silveira Moreira Wiedemann & Valdir Florêncio Veiga-Junior
- writing in Royal Society of Chemistry Advances

“Glycyrrhizin has cytokine-modulating activity, it is not an immunosuppressant like glucocorticoids, and may even enhance the immune response. Therefore, glycyrrhizin is expected to be used in the early stages of disease and can be administered for a longer time, with fewer side effects.”

Pan Luo, Dong Liu & Juan Li - writing in
International Journal of Antimicrobial Agents

“It is reassuring to see that the findings of ‘AVD’ are in line with the WHO’s advice to eat more vegetables and fruit, which emphasizes that “they are important sources of vitamins, minerals, dietary fiber, plant protein and antioxidants. I have noticed that all these ingredients are included in the A3M’s suggested ‘Anti-Viral Diet’.”

Dr. Tarsem Singh - Online Review

“[D]eficiencies in vitamin and trace element levels could result in a more detrimental fate in response to viral infections including SARS-Cov2. Some studies also suggest beneficial effects of natural compounds. In summary, the nutritional status of an individual has a significant impact on not only the susceptibility to, but also the severity of, COVID-19 infection.”

**Esmaeil Mortaz, Gillina Bezemer, Shamila D. Alipoor,
Mohammad Varahram, Sharon Mumby, Gert
Folkerts, Johan Garssen & Ian M. Adcock**
- writing in Frontiers in Nutrition

“It is quite possible that, in the near-future, an ‘anti-viral diet’ will be considered as a commonplace health intervention.”

Dr. Ewald Oersted
The Academy of the Third Millennium
London - England

“This comprehensive review reports evidence on several vitamins, particularly A, D and E, as well as few trace elements, such as zinc and selenium. Furthermore, a large number of nutraceuticals and several probiotics have also shown immune enhancing effects for either preventing or treating viral infections, especially influenza-like illnesses.”

**Ranil Jayawardena, Piumika Sooriyaarachchi,
Michail Chourdakis, Chandima Jeewandara
& Priyanga Ranasinghe - writing in
Diabetology and Metabolic Syndrome**

“I am impressed by the wide scope you cover. In particular, I like your emphasis on the effect of strengthening the immune system, which is of course also the biggest area of research in cancer immunotherapy. Congratulations on an excellent work that may bring the readers to their senses about what to ingest in their daily diet.”

**Timm Schafer Aguilar (Author of Lifeline:
The Case for Effective Cancer Immunotherapy)**

“The immune impairments can be reversed by repletion and this reduces susceptibility to infection. There has been discussion around many micronutrients and anti-viral immunity in the context of infection with SARS-CoV-2 and COVID-19 and there have been numerous publications on this topic since the start of the SARS-CoV-2 pandemic.”

**Prof. Philip C. Calder, BSc (Hons)
PhD, DPhil, RNutr, FRSB, FAFN
Professor of Nutritional Immunology
Head of Human Development & Health
University of Southampton - UK**

“The Academy of Nutrition and Dietetics (AND) in the U.S. published general guidance and practice considerations for registered dietitian nutritionists (RDNs). The AND noted that those with multiple comorbidities, who are older, and malnourished are at an increased risk of being admitted to the ICU and have increased rates of mortality from COVID-19. Therefore, nutrition care to identify and address malnutrition is critical in treating and preventing further adverse health outcomes.”

Elisabet Rosenberg - writing in
Frontiers in Pharmacology

“Well worth reading. Interesting and backed up by multiple studies. Can't wait for the sequel.”

James Hartley - Online Review

“Our findings demonstrate significant physicochemical differences between Lentinan [B-Glucan] extracts, which produce differential in vitro immunomodulatory and pulmonary cytoprotective effects that may also have positive relevance to candidate COVID-19 therapeutics targeting cytokine storm.”

Emma J. Murphy, Claire Masterson, Emanuele Rezoagli, Daniel O'Toole, Ian Major, Gary D. Stack, Mark Lynch, John G. Laffey & Neil J. Rowan - writing in
Science of the Total Environment Journal

“It seems clear from the data available that nutrition is one of the keys to global pandemic resilience, both for the current and future pandemics and could reduce burdens on healthcare systems. Optimal nutritional status is a defence against both communicable and non-communicable diseases. It is also something that can be attended to right now and is not months away.”

Bryndis Eva Birgisdottir - writing in
BMJ Nutrition, Prevention and Health

“Nutritional deficiencies of energy, protein, and specific micronutrients are associated with depressed immune function and increased susceptibility to infection. An adequate intake of iron, zinc, and vitamins A, E, B6, and B12 is predominantly vital for the maintenance of immune function. Therefore, the key to maintaining an effective immune system is to avoid deficiencies of the nutrients that play an essential role in immune cell triggering, interaction, differentiation, or functional expression.”

Farah Naja & Rena Hamadeh - writing in
European Journal of Clinical Nutrition

“Many plant foods, fibre and fermented foods play a role in creating and maintaining a healthy gut microbiota and so will also help to support the immune system. Thus, specific nutrients and the foods that provide them can play a role in supporting the immune system in order that the host can better defend against bacteria and viruses if infected.”

**Prof. Philip C. Calder, BSc (Hons),
PhD, DPhil, RNutr, FRSB, FafN**
Professor of Nutritional Immunology
Head of Human Development & Health
University of Southampton - UK

“Selected vitamins and trace elements support immune function by strengthening epithelial barriers and cellular and humoral immune responses. Supplementations with various combinations of trace-elements and vitamins have shown beneficial effects on the antiviral immune response.”

**Ranil Jayawardena, Piumika Sooriyaarachchi,
Michail Chourdakis, Chandima Jeewandara
& Priyanga Ranasinghe - writing in**
Diabetology & Metabolic Syndrome Journal

“Altogether, our findings reveal that green tea catechins/ polyphenols (especially EGCG, ECG and GCG) can be potent anti-COVID-19 drug candidates. Additionally, this study opens up futuristic testing (in vitro and in vivo) possibilities of these three green tea polyphenols against COVID-19.”

Rajesh Ghosh, Ayon Chakraborty, Ashis Biswas & Snehasis Chowdhuri - *writing in* Journal of Biomolecular Structure and Dynamics

*“In health there is freedom.
Health is the first of all liberties.”*

Henri-Frédéric Amiel (1821-1881)

“Additional studies should include the investigation of other effective and novel plant-derived antiviral lead-compounds, with synergistic effects for a more favorable treatment outcome capable of enhancing immunity and reducing the cost, toxicity, and viral resistance, as well as finding their virus-specific targets and related pharmacological mechanisms of action.”

Pardis Mohammadi Pour, Sajad Fakhri, Sedigheh Asgary, Mohammad Hosein Farzaei & Javier Echeverría - *writing in* Frontiers in Pharmacology

*“Having five anti-viral ingredients every day may increase your protection against viruses **because***

(a) some anti-viral ingredients have a direct or indirect inhibitory effect on certain viruses;

(b) other anti-viral ingredients can enhance the effectiveness of the immune system.”

Edouard d’Araille, Project Lead
AVD : The Anti-Viral Diet - Phase I