Over 200 Scientists & Doctors Call For Increased Vitamin D Use To Combat COVID-19

Scientific evidence indicates vitamin D reduces infections & deaths

To all governments, public health officials, doctors, and healthcare workers,

[Residents of the USA: Text “VitaminDforAll” to 50409 to send this to your state’s governor.]

Research shows low vitamin D levels almost certainly promote COVID-19 infections, hospitalizations, and deaths. Given its safety, we call for immediate widespread increased vitamin D intakes.

Vitamin D modulates thousands of genes and many aspects of immune function, both innate and adaptive. The scientific evidence\(^1\) shows that:

- Higher vitamin D blood levels are associated with lower rates of SARS-CoV-2 infection.
- Higher D levels are associated with lower risk of a severe case (hospitalization, ICU, or death).
- Intervention studies (including RCTs) indicate that vitamin D can be a very effective treatment.
- Many papers reveal several biological mechanisms by which vitamin D influences COVID-19.
- Causal inference modelling, Hill’s criteria, the intervention studies & the biological mechanisms indicate that vitamin D’s influence on COVID-19 is very likely causal, not just correlation.

Vitamin D is well known to be essential, but most people do not get enough. Two common definitions of inadequacy are deficiency < 20ng/ml (50nmol/L), the target of most governmental organizations, and insufficiency < 30ng/ml (75nmol/L), the target of several medical societies & experts.\(^2\) Too many people have levels below these targets. Rates of vitamin D deficiency <20ng/ml exceed 33% of the population in most of the world, and most estimates of insufficiency <30ng/ml are well over 50% (but much higher in many countries).\(^3\) Rates are even higher in winter, and several groups have notably worse deficiency: the overweight, those with dark skin (especially far from the equator), and care home residents. These same groups face increased COVID-19 risk.

It has been shown that 3875 IU (97mcg) daily is required for 97.5% of people to reach 20ng/ml, and 6200 IU (155mcg) for 30ng/ml,\(^4\) intakes far above all national guidelines. Unfortunately, the report that set the US RDA included an admitted statistical error in which required intake was calculated to be ~10x too low.\(^4\) Numerous calls in the academic literature to raise official recommended intakes had not yet resulted in increases by the time SARS-CoV-2 arrived. Now, many papers indicate that vitamin D affects COVID-19 more strongly than most other health conditions, with increased risk at levels < 30ng/ml (75nmol/L) and severely greater risk < 20ng/ml (50nmol/L).\(^1\)

\(^1\) The evidence was comprehensively reviewed (188 papers) through mid-June [Benskin ’20] & more recent publications are increasingly compelling [Merzon et al ’20; Kaufman et al ’20; Castillo et al ’20]. (See also [Jungreis & Kellis ’20] for deeper analysis of Castillo et al’s RCT results.)

\(^2\) E.g.: 20ng/ml: National Academy of Medicine (US, Canada), European Food Safety Authority, Germany, Austria, Switzerland, Nordic Countries, Australia, New Zealand, & consensus of 11 international organizations. 30ng/ml: Endocrine Society, American Geriatrics Soc., & consensus of scientific experts. See also [Bouillon ’17].

\(^3\) [Palacios & Gonzalez ’14; Cashman et al ’16; van Schoor & Lips ’17] Applies to China, India, Europe, US, etc.

\(^4\) [Heaney et al ’15; Veugelers & Ekwaru ’14]
Evidence to date suggests the possibility that the COVID-19 pandemic sustains itself in large part through infection of those with low vitamin D, and that deaths are concentrated largely in those with deficiency. The mere possibility that this is so should compel urgent gathering of more vitamin D data. Even without more data, the preponderance of evidence indicates that increased vitamin D would help reduce infections, hospitalizations, ICU admissions, & deaths.

Decades of safety data show that vitamin D has very low risk: Toxicity would be extremely rare with the recommendations here. The risk of insufficient levels far outweighs any risk from levels that seem to provide most of the protection against COVID-19, and this is notably different from drugs. Vitamin D is much safer than steroids, such as dexamethasone, the most widely accepted treatment to have also demonstrated a large COVID-19 benefit. Vitamin D's safety is more like that of face masks. There is no need to wait for further clinical trials to increase use of something so safe, especially when remediing high rates of deficiency/insufficiency should already be a priority.

Therefore, we call on all governments, doctors, and healthcare workers worldwide to immediately recommend and implement efforts appropriate to their adult populations to increase vitamin D, at least until the end of the pandemic. Specifically to:

1. Recommend amounts from all sources sufficient to achieve 25(OH)D serum levels over 30ng/ml (75nmol/L), a widely endorsed minimum with evidence of reduced COVID-19 risk.
2. Recommend to adults vitamin D intake of 4000 IU (100mcg) daily (or at least 2000 IU) in the absence of testing. 4000 IU is widely regarded as safe.5
3. Recommend that adults at increased risk of deficiency due to excess weight, dark skin, or living in care homes may need higher intakes (eg, 2x). Testing can help to avoid levels too low or high.
4. Recommend that adults not already receiving the above amounts get 10,000 IU (250mcg) daily for 2-3 weeks (or until achieving 30ng/ml if testing), followed by the daily amount above. This practice is widely regarded as safe. The body can synthesize more than this from sunlight under the right conditions (e.g., a summer day at the beach). Also, the NAM (US) and EFSA (Europe) both label this a “No Observed Adverse Effect Level” even as a daily maintenance intake.
5. Measure 25(OH)D levels of all hospitalized COVID-19 patients & treat w/ calcifediol or D3, to at least remedy insufficiency <30ng/ml (75nmol/L), possibly with a protocol along the lines of Castillo et al ‘20 or Rastogi et al ‘20, until evidence supports a better protocol.

Many factors are known to predispose individuals to higher risk from exposure to SARS-CoV-2, such as age, being male, comorbidities, etc., but inadequate vitamin D is by far the most easily and quickly modifiable risk factor with abundant evidence to support a large effect. Vitamin D is inexpensive and has negligible risk compared to the considerable risk of COVID-19.

Please Act Immediately

5 The following include 4000 IU within their tolerable intakes in official guidelines: NAM (US, Canada), SACN (UK), EFSA (Europe), Endocrine Society (international), Nordic countries, The Netherlands, Australia & New Zealand, UAE, and the American Geriatrics Soc. (USA, elderly). No major agency specifies a lower tolerable intake limit. The US NAM said 4000 IU “is likely to pose no risk of adverse health effects to almost all individuals.” See also [Giustina et al ’20].
The signatories below endorse this letter. Affiliations do not imply endorsement of the letter by the institutions themselves.

This letter takes no position on other public health measures besides vitamin D. Personal views of individual signatories on any other matter do not represent the group as a whole.

All signatories declare no conflicts of interest except as noted.

To emphasize: The organizing signatories have no conflicts of interest in this area (financial or otherwise), nor have they done research in this area prior to 2020.

<table>
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<tr>
<th>Signatories (220 total; other counts at the end)</th>
<th>recommended intake</th>
<th>personal daily intake</th>
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<tbody>
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<td>4000 IU</td>
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<tr>
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<td>10,000 IU</td>
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<tr>
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<tr>
<th>Name</th>
<th>Position</th>
<th>Location</th>
<th>Vitamin D Intake</th>
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<tr>
<td>Dr. David Verhaeghen</td>
<td>MD, Anesthesiology, Algology and Pain Medicine, Aalst, Belgium.</td>
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<td>Dr. Silvia Migliaccio</td>
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<tr>
<td>Dr. Vítor Oliveira</td>
<td>MD, Internal Medicine, Brazil.</td>
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<td>Dr. William Shaver</td>
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<td>Dr. Mark S. Braiman</td>
<td>PhD. Professor of Chemistry, Syracuse University, USA.</td>
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Dr. Linda A. Lindsay, MD. Assistant Clinical Professor of Pediatrics, Icahn School of Medicine at Mount Sinai, New York, NY, USA.

Dr. Rose Anne Kenny, MD FRCP FRCPI FRCPEd FTCD FESC MRIA. Professor, Chair of Medical Gerontology, Trinity College, Dublin, Ireland.

Dr. Mihkel Zilmer, Dr. med. Professor, Medical Biochemistry, Head of Department of Biochemistry, Tartu University, Faculty of Medicine, Estonia.

Dr. Jaan Eha, MD PhD. Professor of Cardiology, Tartu University, Faculty of Medicine, Estonia.

Dr. Anna Moore, MBBS PgDipNutrMed, London, UK.

Dr. Roger D. Seheult, MD. Assistant Professor, Loma Linda University School of Medicine. Associate Professor, UC Riverside School of Medicine. Cofounder, MedCram, USA.

Dr. Jean-Claude Souberbielle, PhD PharmD. Former head of Hormonology Laboratory, Necker Hospital, Paris, France.

Dr. Emmanuelle Faucon, MD, Toulon, France. Former Medical Affairs Director in Immunology and Virology, Bristol Myers Squibb.

Dr. Rose Anne Kenny, MD FRCP FRCPI FRCPEd FTCD FESC MRIA. Professor, Chair of Medical Gerontology, Trinity College, Dublin, Ireland.

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Dr. Elisa Song, MD. Pediatrician, Belmont, CA, USA.

Dr. Mylene Huynh, MD MPH. Colonel (ret), USAF. Adjunct Assistant Professor, Department of Preventive Medicine and Biometrics, Uniformed Services University of the Health Sciences, USA.

Dr. Yosef Weisman, MD. Professor. Retired head of Bone Desease Unit and the Vitamin D Lab, Tel Aviv Souraski Medical Center, Faculty of Medicine, Tel Aviv University, Israel.

Dr. Andrius Bleizgys, MD PhD. Lector of Clinic of Internal Diseases, Family Medicine and Oncology, Vilnius University Faculty of Medicine, Vilnius, Lithuania.

Dr. Keshav Singhal, FRCS MS(orth) M.Ch(orth). Professor, Consultant Orthopaedic Surgeon. Chair British Association of Physicians of Indian Origin (BAPIO), Wales. Council Member & Trustee, Swansea University. Fellow of Learned Society of Wales, UK.

Dr. Gennadi Glinsky, MD PhD. Professor, Institute of Engineering in Medicine, University of California, San Diego, La Jolla, USA.

Dr. Eero Vasar, MD PhD. Professor of Human Physiology, University of Tartu, Estonia.
Dr. Frank C. Church, PhD. Professor of Pathology and Laboratory Medicine, University North Carolina School of Medicine, Chapel Hill, NC, USA. 4000 IU 5000 IU

Dr. Michael J. A. Robb, MD. Physician, Oto-Neurologist, Robb Oto-Neurology Clinic, Phoenix, Arizona. Past President, Association of American Physicians and Surgeons (AAPS), USA. 4000 IU 10,000 IU

Dr. Giles Duffield, PhD. Associate Professor, Department of Biological Sciences & Eck Institute for Global Health, University of Notre Dame, Notre Dame, IN, USA. 4000 IU 5000 IU

Dr. Harry Wichers, PhD. Professor in Immune Modulation by Food, Wageningen UR, The Netherlands. 2000 IU 1000 IU

Dr. Matthew A. Nehs, MD. Assistant Professor of Surgery, Harvard Medical School. Program Director, Harvard Combined Endocrine Surgery Fellowship. USA. 4000 IU 5000 IU

Dr. Hana Fakhoury Hajeer, PhD. Associate Professor of Biochemistry, Alfaisal University, Saudi Arabia. 2000 IU 2000 IU

Dr. Fatme Al Anouti, PhD Biochemistry. Associate Professor, College of Natural and Health Sciences, Zayed University, UAE. 4000 IU 4000 IU

Dr. José C. Tutor, PharmD PhD MB. Pharmacology Unit, Health Research Institute, University Clinical Hospital, Santiago de Compostela, Spain. 4000 IU 10,000 IU

Dr. Wolfgang Schrott, PhD. Professor (retired), Chemistry, Hochschule Hof University of Applied Sciences, Germany. 4000 IU 2000 IU

Dr. Brian Lenzkes, MD, Internal Medicine, San Diego, CA, USA. 2000 IU

Dr. Ryan (Nguyen) Hoang, MD. Resident Physician, Pediatrics, Children's Mercy Hospital, Kansas City, Kansas, USA. Reddit Moderator & Editor at /r/science & /r/coronavirus. 4000 IU 2000 IU

Dr. Hayley A Young, PhD. Associate Professor, Nutrition and Behaviour, Swansea University, UK. 4000 IU 4000 IU

Dr. Luis Lugones, PhD. Assistant Professor Microbiology, Faculty of Sciences, Utrecht University, The Netherlands. 4000 IU 5000 IU

Beth Ellen DiLuglio, RDN LDN MS in Human Nutrition from Columbia University College of Physicians and Surgeons Institute of Human Nutrition. Former Associate Professor of Nutrition, Palm Beach State College, Lake Worth, FL. Registered Dietitian Nutritionist, Florida, USA. Disclosure: Researcher & writer for OptimalDx.com. 4000 IU 4000 IU

Dr. David Benton, PhD DSc. Professor, Swansea University, UK. 4000 IU 4000 IU

Dr. Ljubiša Mihajlović, PhD, Molecular biology. Professor, Academy of Technical and Educational Sciences, Niš, Serbia. CEO, Geneinfo, Niš, Serbia. 4000 IU 4000 IU

Dr. Huub Savelkoul, PhD. Full Professor, Head, Cell Biology and Immunology Group, Wageningen University, The Netherlands. 2000 IU 1000 IU

Dr. Cicero Galli Coimbra, MD PhD. Assistant Professor of Neurology and Neuroscience, Federal University of São Paulo. President, Institute for Investigation and Treatment of Autoimmunity, Brazil. Creator, "Coimbra Protocol" for autoimmune diseases. 4000 IU 20,000 IU

Dr. Parag Singhal, MD FRCP FACP. Professor of Medicine, University of South Wales, UK. Consultant Endocrinologist. 4000 IU 3300 IU
Dr. Meis Moukayed, PhD (Cantab), Professor of Health and Life Sciences, American University in Dubai, Dubai, UAE.

Dr. Linda Bluestein, MD. Clinical Assistant Professor, Medical College of Wisconsin, USA.

Dr. Alex Bäcker, PhD, Biology, Caltech, USA.

Dr. Chad G. Kahl, MD SFS FAAFP. Clinical Assistant professor of Medicine, Uniformed Services University. Chief Medical Officer, Pentagon Flight Medicine Clinic, USA.

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Dr. Edward Jude, MBBS MD FRCP. Professor of Medicine, University of Manchester, UK.

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Dr. Luciano G Nina, MD. Assistant Professor, Faculdade de Medicina de Jundiaí, Sao Paulo, Brazil.

Dr. Robert M Hansen, MD. Internal Medicine, Critical Care Medicine, Anesthesiology. Managing Partner, Redding Anesthesia Associates Medical Group, Redding, CA, USA.

Dr. Canan Karatay, MD. Professor of Heart and Internal Diseases, former Rector of Istanbul Bilim (Science) University, Istanbul, Turkey.

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Dr. Vassaras Alexandros-Charalampos, MD, NeuroImmunology. Papageorgiou General Hospital, Greece.

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Dr. Bryan A Stepanenko, MD MPH IFMCP. Active Duty US Army, Member of Task Force Resilience, Army Public Health, Primary Care Physician, USA.

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Dr. Joseph Parambil, MD. Pulmonologist, Cleveland Clinic, Respiratory Institute, and Assistant Professor of Medicine, Cleveland Clinic, Lerner College of Medicine, Cleveland, OH, USA.
Dr. David Norman Grant, Former Consultant Neurosurgeon, Great Ormond St. Hospital and National Hospital for Neurology and Neurosurgery, Queen Square, London, UK.

Dr. Ellen C G Grant, MBChB, DObstRCOG, Retired Physician and Medical Gynaecologist, Kingston upon Thames, UK.

Dr. Peter Moon, PhD. Professor Emeritus, Biomaterials Director, Department of General Practice, Virginia Commonwealth University, School of Dentistry, Richmond, VA, USA.

Dr. Ram Yogendra, MD MPH. Anesthesiologist, Private Practice. Founder & Director, ECA Wellness, Rhode Island, USA.

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Dr. Theo van Kempen, Dr Ir, PhD. Adjunct Professor, North Carolina State University, USA.

Dr. Laurence S. Harbigé, PhD C Biol FRSB. Deputy Director of the Lipidomics and Nutrition Research Centre (LNRC) and Senior Lecturer in the School of Human Sciences, London Metropolitan University, UK.

Dr. Björn Hammarskjöld, MD, PhD in Biochemistry. Assistant professor in Pediatrics at Strömstad Academy, Östervåla, Sweden.

Dr. Birgit Strodel, PhD. Professor, Computational Biochemistry, Research Centre Jülich, Jülich, and Heinrich Heine University, Düsseldorf, Germany.

Dr. Pearl Grimes, MD FAAD. Founder & Medical Director, Vitiligo & Pigmentation Institute of Southern California. Chief Dermatologist, Versicolor Technologies. Former Clinical Professor of Dermatology, UCLA, USA.

Dr. Julian Walters, MBBChir, DSc. Professor of Gastroenterology, Imperial College London, UK.

Dr. Patrick Chambers, MD. Laboratory Director (ret), Torrance Memorial Medical Center, Torrance, CA, USA.

Dr. David Sinclair, PhD. Professor of Genetics, Co-Director, Paul F. Glenn Center for the Biology of Aging, Harvard Medical School, Boston, MA, USA. Disclosure: List of past & present affiliations.

Signature statistics as of Feb 6, 2021:
220 total signatories
115 professors
131 signatories with medical degrees
116 signatories with PhDs or equivalent or higher degrees
128 signatories with personal intakes of at least 4000 IU per day
29 signatories with personal intakes of at least 10,000 IU per day
33 countries

Our goal is to change policy and standard of care to save lives and help mitigate the pandemic, not to create the longest possible list of names. At this point, we have enough PhDs and medical doctors. We welcome additional signature requests from those especially well placed to help convince government
decision makers to implement the calls-to-action enumerated in the letter, such as senior professors in
areas such as immunology, infectious disease, endocrinology, or vitamin D research, or related areas,
or such as officials at national or international public health bodies (CDC, WHO, etc.) or members of
COVID-19/pandemic tasks forces for large jurisdictions. If you are such an authority, please fill out this
form. If you are not but would like to help, please spread the word via social media, directly to your
local public health and political leaders, and directly to the most senior people that you have a personal
or professional route to that might be able to help.

info@vitaminDforAll.org