Creating international and interdisciplinary collaboration for health

AONM Newsletter December 2022

Finding Resolutions for Post-COVID

We may perceive calmer waters around us with the lifting of the COVID restrictions of the last two years in the UK, but we are still stuck with the after-effects of what is variously called Long-COVID and Post-COVID. A great deal of stress on the health front is being driven by these syndromes with multiple manifestations. The close to one hundred COVID services that have been established by the NHS aiming to provide access to specialist diagnosis, treatment and rehabilitation turn a blind eye to one of the key contributors to the syndrome, despite a wealth of scientific literature as well as clinical evidence pointing to it: the reactivation of dormant coinfections.

This newsletter is dedicated to helping those patients and practitioners looking for solutions to the problem. AONM in conjunction with ArminLabs has now launched two Post-COVID Viral Reactivation Panels to help bridge that gap.

We also cover the interesting events ahead through to the end of this year into the first quarter of 2023, and wish all of our readers the very best of seasonal greetings. We hope with all our heart that 2023 will really be a turning point to recovery in every sense.

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1. Post-COVID and Viral Reactivation

Both the NHS and the CDC define post COVID-19 syndrome as "signs and symptoms that develop during or following an infection consistent with COVID-19 that continue for more than 12 weeks and are not explained by an alternative diagnosis".(i) The Royal Society's SET-C (Science in Emergencies Tasking: COVID-19) group in their report "Long COVID: What is it and what is needed?" describe the wide range of symptoms reported by individuals following SARS-CoV-2 infection(ii) *(See Table 1 on next page):*

One study of COVID-19 patients who were followed for up to 9 months after illness found that approximately 30% reported persistent symptoms.(iii) These patients are being given the diagnosis Long-COVID, post-acute COVID-19 syndrome (PACS), or post-acute sequelae of COVID-19 (PASC).

The remarkably wide range of persistent or recurrent symptoms reported by individuals following SARS-CoV-2 infection includes the following:

- severe fatigue
- reduced exercise capacity
- breathlessness
- chest pain or heaviness
- fever
- palpitations
- cognitive impairment - "brain fog"
- anosmia or ageusia
- vertigo and tinnitus
- headache
- peripheral neuropathy
- metallic or bitter taste
- skin rash
- joint pain or swelling

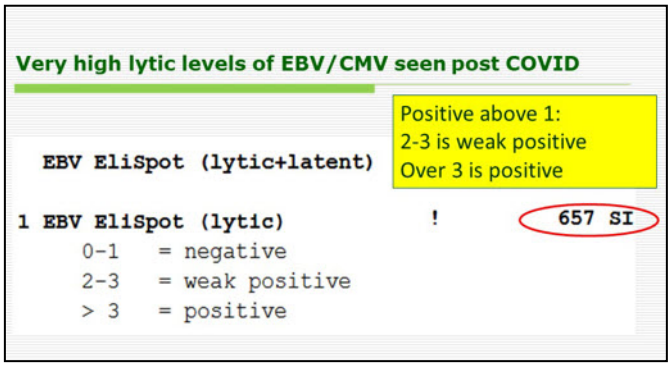
Table 1

Numerous studies have now been done and found COVID-19-associated reactivation of EBV and other viruses. A study in "Pathogens" in June 2021 reported: "These findings suggest that many Long-COVID symptoms may not be a direct result of the SARS-CoV-2 virus but may be the result of COVID-19 inflammation-induced EBV reactivation."(iv) The findings of the study *"Positive Epstein-Barr virus detection in coronavirus disease 2019 (COVID-19) patients"* were similar.(v) Researchers in the United States and Turkey found that two-thirds of patients with Long-COVID had a reactivated Epstein-Barr virus infection, compared to only 10% of controls.(vi)

An August 2022 article in the journal "Allergy", *Association between Epstein-Barr-Virus reactivation and development of Long-COVID fatigue*, states "EBV reactivation in the throat was more common in patients with Long-COVID fatigue, also months after acute SARS-CoV-2 infection, compared with convalescent SARS-CoV-2 patients. This suggests that EBV replication may be a co-factor in a sub-group of patients developing Long-COVID fatigue."(vii) An August 2021 article in Immunity, Inflammation and Disease in a study conducted at Wuhan Infectious Disease Hospital found a high proportion of COVID-19 patients had EBV reactivation: 55 of 217 patients.

An August 2022 article in the Journal of Infectious Diseases(viii) found a significant association with latent Cytomegalovirus: "Our analyses demonstrate that CMV seropositivity is associated with more than twice the risk of hospitalization due to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection." A further article (Jan. 2022) established in a large-cohort study (311 patients) that CMV seropositivity is a potential novel risk factor for severe COVID-19 in non-geriatric patients.(ix) Herpes serostatus was also analysed and found to be a significant cofactor: "Most interestingly, CMV and HSV serostatus was also associated with higher COVID-19 severity."

Varicella Zoster Virus reactivation has also been found in association with COVID, whether with the infection, as in the Neurology: Clinical Practice article *"COVID-19 Associated With Concomitant Varicella Zoster Viral Encephalitis"*,(x) or the vaccination itself.(xi) The June 2022 MedRvix article *"Impact of Pre-Existing Chronic Viral Infection and Reactivation on the Development of Long-COVID"* is also very worth examining for its conclusion that "COVID-19 can potentially cause reactivation of VZV and subsequently have an additive effect in neurologic complications".



Example of test results: see also https://aonm.org/viruses-and-testing/

The brilliant scientists Amy D. Proal and Michael B. VanElzakker, the latter particularly renowned for his work on ME ("a herpes infection of the vagus nerve"), have together written an article called *"Long-COVID or Post-acute Sequelae of COVID-19 (PASC): An Overview of Biological Factors That May Contribute to Persistent Symptoms"*(xii), that highlights the mechanisms that single-stranded RNA viruses (which SARS-CoV-2 is) employ to establish persistent infections(xiii), making the link to other single-stranded RNA viruses such as Coxsackieviruses and Hantaviruses. The ability of Coxsackie B to trigger myocarditis/pericarditis makes it a particularly insidious co-infection alongside COVID, for obvious reasons.(xiv)

The neurotrophic nature of the herpes viruses (especially EBV, CMV, HSV, VSV, HHV-6) as well as the single-stranded RNA enteroviruses flags them up as candidates for much of the

symptomatology found in Post-COVID syndromes. The links to ME are never far, either. As Amy Proal and Michael VanElzakker wrote: "Overlap between the PASC and ME/CFS diagnoses is not surprising, since most cases of ME/CFS begin with a viral infection, or involve multiple exposures to viral and bacterial pathogens over time." Extremely concerning prospects with most of the world's population now having been exposed, by all accounts.

i. https://www.england.nhs.uk/coronavirus/post-covid-syndrome-long-covid/
ii. https://royalsociety.org/-/media/policy/projects/set-c/set-c-long-covid.pdf
iii. https://pubmed.ncbi.nlm.nih.gov/33606031/
iv.https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC8233978/
v. https://www.nature.com/articles/s41598-021-90351-y
vi.https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8233978/
vii. https://pubmed.ncbi.nlm.nih.gov/35950630/
viii.https://academic.oup.com/jid/article/226/3/463/6520490
ix. https://pubmed.ncbi.nlm.nih.gov/35613127/
x.https://cp.neurology.org/content/neurclinpract/11/2/e219.full.pdf
xi. https://pubmed.ncbi.nlm.nih.gov/35931613/
xii. https://pubmed.ncbi.nlm.nih.gov/34248921/
xiii. https://pubmed.ncbi.nlm.nih.gov/28319790/
xiv.https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8503119/

2. The overlaps between Post-COVID-19 and Lyme Disease

Similarities between Post-COVID-19 syndrome and persistent Lyme Disease have been noted by authorities across the world, whether Dr. Joe Burrascano, Dr. Richard Horowitz, Dr. Joe Jemsek or Dr. Jack Lambert. Both are chronic and multisystem syndromes. As Dr. Kinderlehrer writes: "The symptoms of Long-COVID are distressingly familiar to patients who suffer from persistent illness with Lyme disease: severe fatigue, muscle aches and joint pains, impaired cognition ("brain fog"), insomnia, headaches, sleep disorders, cough and shortness of breath, palpitations and light-headedness."

Long-term issues with Lyme disease and COVID-19 infections are strikingly similar. Lyme Disease can certainly be mistaken for COVID, and vice versa, so testing is worthwhile from that viewpoint alone. Dana Parish, co-author of *"The hidden cause of the autoimmune pandemic and how to get healthy again"* (see the January 2022 AONM newsletter for a review: https://aonm.org/wp-content/uploads/2022/01/AONM-Newsletter-January-2022.pdf), and Lyme sufferer herself, writes informatively about how Post-COVID and chronic Lyme can intersect at https://www.lymedisease.org/COVID-lyme-intersect-usa-today/. Project Lyme also has great resources on Lyme and COVID, drawn up by Dr. Richard Horowitz and partners: https://projectlyme.org/resource/resources-on-lyme-covid/.

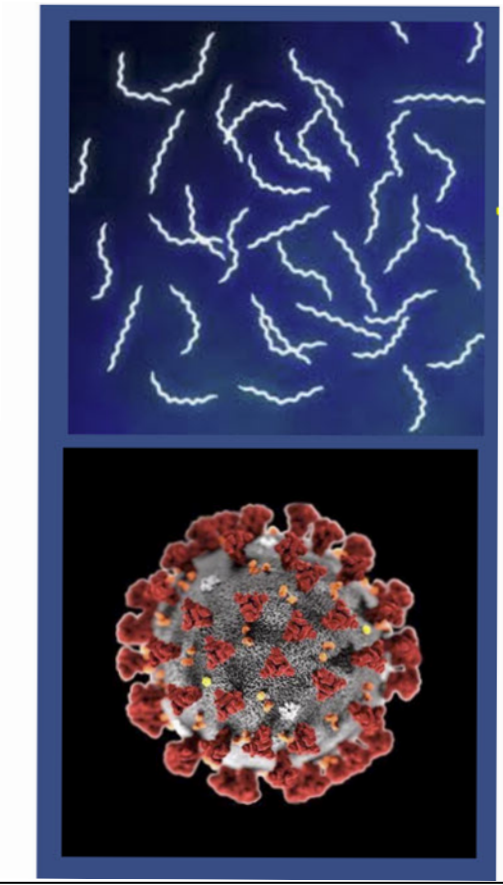


Image taken from "A Tale of Two Pandemics" by Bob Bransfield https://aonm.org/wp-content/uploads/2020/06/A-Tale-of-Two-Pandemics_V2.pdf

Of course one can suffer from both simultaneously: Dr. Stephen Philips, co-author of the book above with Dana Parish, has participated in setting up a Long-COVID & Lyme Internship programme with MIT:https://sandbox.mit.edu/dhive-long-covid-lyme as has Ireland's Dr. Jack Lambert (https://learn.invisible.international/courses/long-lyme-co-infections-and-long-covid/).

But is it possible for COVID-19 to reactivate a past infection of Lyme Disease and/or its coinfections? The immune dysregulation of Long-COVID can certainly lead to a flare in previous infections that had been dormant; we have seen that there is ample evidence of this occurring with viruses (see previous article in this issue). Dr. Horowitz has recently written in the British Medical Journal about this phenomenon: "A review of the literature reveals that long COVID and chronic Lyme disease share certain etiological overlaps based on published

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3. Spotlight on AONM's new Post-COVID Viral Reactivation Panels

AONM now has two Post-COVID Viral Reactivation Panels based on the fact that several of the herpes viruses have now been evidenced to reactivate with COVID-19, and even with mild cases of SARS-CoV-2 (see article 1 in this issue).

Both panels make use of the very best tests of current infection – not just the serology of IgG antibodies, which tend to primarily signify past infection, though they are useful to show that the patient has actually had it (Herpes virions never completely disappear, making them more prone to reactivate), and IgM antibodies, which usually dissipate a few weeks after infection, though there is also a phenomenon called "persistent IgM".

So how can one pick up ongoing but chronic infections, which is the difficulty with coinfections of Long COVID/Post-COVID?

Using T-cells to show a cellular response against antigens is much more sensitive, and has a much higher likelihood of indicating active infection. EliSpot (enzyme-linked immunosorbent spot) technology has long been used in Germany to do exactly this: it quantifies T-cells that secrete signature proteins (such as a given cytokine) against a specific antigen. EliSpots performed by ArminLabs in Augsburg, Germany, evaluate the number of spot-forming units using a stimulation index (SI) based on IGRA (Interferon Gamma Release Assay).

AONM together with ArminLabs has brought out two panels: a Basic Post-COVID Viral Reactivation Panel that tests for the "lytic" EliSpots of EBV and CMV only (the currently replicating form), as well as VZV and Coxsackie. The tests for the latter two are antibody tests that also include IgA, which are antibodies found in the mucous membranes of the lungs, sinuses, stomach, and intestines. This is an excellent additional immunoglobulin, as it indicates possible current, ongoing or very recent infection, as well as chronic persistent infection, reactivation or reinfections. Immunoglobulin A is however only useful for viruses and bacteria that primarily live in the mucosal membranes (which VZV and Coxsackie do).

The Advanced Panel also includes Herpes Simplex Viruses 1 and 2, as well as Human Herpes Virus 6 (HHV-6), Chlamydia pneumoniae and Mycoplasma, all of which have substantiation of association in medical literature as well as testing laboratories and clinical practice.

Please contact AONM to find out more: either info@aonm.org, laboratories@aonm.org, or the Helpline on 0333 121 0305.
Various webinars and slides are available on the topic, e.g., SARS-CoV-2 viruses and coinfections, by Dr. Armin Schwarzbach:
https://aonm.org/viruses-and-testing/

i. *http://www.microbiologybook.org/mayer/Ab%20formation2000.htm*
ii. *https://www.labtestsonline.org.au/learning/test-index/antibody-tests; 2.* https://www.genscript.com/IgM-antibody.html
iii. *Sedegah M. The Ex Vivo IFN-γ Enzyme-Linked Immunospot (ELISpot) Assay Methods Mol Biol. 2015;1325:197-205;*

4. AONM Shop

AONM has opened its own online shop so as to enable easier test ordering, for those who wish to order in this way, as well as provide a range of nutritional products that can be of health benefit.

To start with we are launching two different health items - Phytobox and Britt's Superfoods.

PhytoBox

PhytoBox offers high-quality food supplements in capsule form. The focus is to support the immune system in chronic disease, inflammation, environmental / toxin pollution, ME/CFS, as well as other multi-infection or multi-system disease.

The products are of very high quality and the range of scientifically based supplements is characterised by the highest possible compatibility and bioavailability.

PhytoBox products are hypoallergenic*. This means that almost all of the products are also suitable for sensitive people, allergy sufferers and those with food intolerances. They are:

- Free from unnecessary additives and preservatives
- Free from sweeteners and flavourings
- Free from lactose, fructose** and gluten
- Free from artificial colourings and coatings
- Free from transfats and hardened fats
- Free from flow and release agents
- Free from fillers
- Vegan (except PhytoBox 6 & 8 which contain Propolis, and PhytoBox 5 which contains bacterial cultures)

The range of 11 products covers:
Phytobox 1: Support for Borrelia and intracellular infective pathogens.
Phytobox 2: Support for neuroborreliosis and neuropathic dysfunctions.
Phytobox 3: Breakdown of pleomorphic forms and support of detoxification & purification.
Phytobox 4: Anti-inflammatory and pain relieving.
Phytobox 5: Synbiotic with prebiotic.
Phytobox 6: Support in chronic opportunistic virus infection, especially herpes vividiae.
Phytobox 7: Support in cytokine storms.
Phytobox 8: Support in Bartonella infection.
Phytobox 9: Support in Chlamydia Pneumoniae infection.
Phytobox 10: NK cell support.
Phytobox 11: Support in Coxsackie and Echovirus infection.
Visit the AONM shop to find out more https://aonm.org/shop/phytobox/

Britt's Superfoods

Britt's Superfoods are a range of juices that are field-grown, organic and freshly frozen. They include some of the most nutritious superfood juices on the market. Because they are frozen immediately after harvesting and juicing, they are natural energy boosters and packed full of all the antioxidants, amino acids and enzymes needed for good health.

Powdered wheatgrass and other juices generally do not retain all of their vital nutrients, but these juices are delivered to your door in frozen daily sachets, ready to be stored in your freezer and be taken daily.

For example, the raw, organic, fresh wheatgrass juice contains higher levels of chlorophyll than any other green vegetable. Due to its exceptionally high nutritional content, fresh wheatgrass juice can contribute to healthy energy levels, reduce tiredness and fatigue, boost physical and mental performance and support a healthy immune system.

The fresh, raw Elixir Vitality juice is an incredible antioxidant and provides a natural energy boost. The high levels of vitamins and nutrients it contains also boost the immune system, support blood cell development and assist with healthy skin, nails and vision.

The range also includes barleygrass, ginger and turmeric, rainbow juice, beetroot, kale and many more to chose from.

See https://aonm.org/shop/frozen-juice-shots/ for more information.

*** In single products, ingredients are obtained from potentially allergenic substances (e.g. plant extracts). These products are marked accordingly.**
**** In general, the products are free of fructose, but may occasionally contain natural fructose from individual ingredients (e.g. plant extracts).**

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literature, including possible persistent infection, reactivation of infection (EBV, HHV6), autoimmunity and immune dysfunction, POTS/dysautonomia, and mitochondrial dysfunction," and concludes his article by saying "perhaps it is time to evaluate … the high societal burden of chronic fatiguing, musculoskeletal illnesses with neuropsychiatric symptoms, which are responsible in large part for high levels of chronic disability and rising health care costs across the globe."

All of these ILADS Greats note that it is worth considering whether COVID-19 has triggered a Borrelia/coinfection flare, if one has a history of those conditions. Numerous doctors are reporting the association from around the world, but long-term studies have not yet been done. Dr. Daniel Kinderlehrer mentions that he has heard of this most frequently in association with Bartonella and Mycoplasma, both capable of causing serious autoimmune problems. We will continue checking the literature as well as the testing results coming in from ArminLabs and elsewhere, and report back as the (sadly very disturbing) evidence builds.

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i. https://www.lymedisease.org/kinderlehrer-lyme-long-cov-id/
ii. https://www.bmj.com/content/378/bmj.o2188/rr
iii. https://drtoddmaderis.com/causes-of-long-covid

5. Upcoming events

Academy of Nutritional Medicine
13th December, 7.00 pm
Webinar with Dr. Armin Schwarzbach
"Post-COVID Viral Infections: Incidence and Approaches"
https://us02web.zoom.us/webinar/register/WN_mV8NC7qSSyiICv00MrVwTA

ANP
12th January
Webinar with Kira Schuemmer, Tisso Naturprodukte:
"**Lactoferrin: the multi-talent for our immune system"**
https://theanp.co.uk/webinars-public/

Klinghardt Institute
A.R.T. Beginners Online Programme
17th January 2023
www.klinghardtinstitute.com

BSEM Training Day 14 - Beyond Neuroinflammation I
Friday, 3rd February 2023
Examining neurological conditions from: ADHD, ADD, autism spectrum disorder to Alzheimer's and Parkinson's
Hallam Conference Centre, 44 Hallam Street, London W1W 6JJ
To book: https://www.bsem.org.uk/events/training-day-14-beyond-neuro-inflammation

FarmEd and Think Through Nutrition Exploring Farming, Food Nutrition and Brain Health
Wednesday, 8th March 2023
Honeydale Farm, Station Road, Chipping Norton, OX7 6BJ
More details: https://www.farm-ed.co.uk/event-details/think-through-nutrition-exploring-farming-food-nutrition-and-brain-health-3

Integrative and Personalised Medicine 2023
29th June - 1st July
https://www.ipmcongress.com/
QEII Centre, Westminster
AONM/Arminlabs will be present with a stand, and Gilian Crowther AONM will be giving a talk

For more detailed information about AONM please see our website
www.aonm.org

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