NEW REPORT FROM LONG-COVID-RECOVERY.ORG EVALUATES THE ROLE OF NUTRITIONAL IMMUNOLOGY IN LONG COVID RECOVERY

Submitted by: Lily Pad PR Limited
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Edinburgh, UK; A new report published by researchers at www.long-covid-recovery.org, explores the latest science illustrating the role of endothelial cell inflammation in COVID-19 and the role 'nutritional immunology' could play in improving persistent long COVID symptoms. The paper, evaluated and reviewed with scientific input from Dr Emma Derbyshire, Dr Anton Krige and Dr Mabel Blades, outlines four areas where combinations of key nutrients and plant bioactives could, at the right dosage, help facilitate recovery in some long-COVID patients.

The latest research suggests that SARs-CoV-2, the virus that causes COVID-19, is more of an endothelial, rather than a lung disease as originally thought. Scientists from Harvard Medical School and Imperial College (https://academic.oup.com/eurheartj/article/41/32/3038/5901158)* pointed to a link between the endothelium and the severity of COVID-19. The human endothelium forms a crucial interface between the blood compartment and tissues, and forms part of the pathogenic 'front line' – a first point of encounter with pathogens, such as the SARs CoV-2 virus.

Patients with long-COVID can experience a range of fluctuating and persisting symptoms ranging from a cough, fever, breathlessness/laboured breathing, excessive fatigue, chest pain and palpitations to cognitive problems, neurological problems, and GI issues, to name only a few. The causes of these symptoms generally remain to be determined but certain disease mechanisms, including the mentioned inflammatory reactions, could have a central role to play.

'Nutritional immunology', also known as immunonutrition, is a new and rapidly developing field of science examining the impact of foods and nutritional components on systemic immune function according to an editorial in Frontiers in Immunology journal (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6353841/), 2019.

Following analysis of over 1400 peer-reviewed scientific papers, 281 relevant papers were included in the report, focused around the immunological functionality of key nutrients such as vitamins, minerals and plant bioactives, with the report proposing a four-pronged approach to improving long-COVID symptoms.

According to Dr Emma Derbyshire, "A growing body of evidence points towards how nutritional immunology could have a role to play in modulating immune function; attenuating inflammation; inhibiting viral replication and supporting the gut, liver and a healthy blood stream. Interventions using an extended array of nutrient and plant bioactive combinations, would be worthwhile in the context of long-COVID to determine whether these could help to restore health, wellbeing, and quality of life to what it once was 'pre-COVID'". Of note, vitamin D, zinc and zinc ionophores, selenium, glutathione, curcumin, EGCG, quercetin, bioactive combinations appear to show particular promise - balancing immune response, attenuating inflammation and inhibiting SARs-CoV-2 activity."

The report also includes anecdotal evidence from a small feasibility study comprising of seven volunteers with long-COVID symptoms, who started to take a two-part nutritional food supplement called 'RecoverUp Immune Support 24h' – which contains a combination of 33 various nutrients in the form of vitamins,

minerals, plant bioactives and biomes designed to address the four key areas outlined in the report.

Www.long-covid-recovery.org' (https://www.long-covid-recovery.org/)s lead researcher Calum Scott said, "Whilst this was a small feasibility study to illustrate support of the immune system via the selected nutrients, the results offer a promising 'proof of concept' that we hope will support the initiation of larger clinical trials. As each of the ingredients used was already UK approved for sale and consumption, with firm safety profiles spanning many years, we were able to move fast with a small group to obtain clues that we were on the right path."

Six of the seven case studies reported significant improvements with their self-described symptoms, when compared to their initial baselines, within three to four weeks, with the remaining one reporting improvements that were noticeable but minor. One case study volunteer describes the dramatic improvements in chest tightness and the suffocating feeling she was still experiencing eight months post-COVID, "About two weeks after starting RecoverUp food supplements, I started to notice my chest improving. I started to wake up on a morning feeling normal again! It deteriorated slightly throughout the day but nothing like as bad as it was. The excess mucous I was experiencing in my trachea has dried up. I think the problem with my chest was inflammation in the airways and the ingredients in the supplements seem to have reduced that. My chest seems to be improving day by day now and I feel at last as if I might actually recover from this long-COVID instead of being left with lifelong chest problems."

Calum Scott added, "The ingredients contained in the supplements were combined into a two-part formula, with a separate AM and PM formulation, in order to allow various essential minerals to work in the most optimised manner, with the overall aim of supporting the immune system, especially in times of depleted nutrient levels, for example when in recovery. RecoverUp is a nutritional food supplement with health claims approved for various nutrients by the Department of Health (UK), including support for the normal function of the immune system; support of normal oxygen transport in the body; as well as normal formation of red blood cells and haemoglobin, energy-yielding metabolism and muscle function. In addition the combination of ingredients aims to offer protection of cells from oxidative stress, support of normal DNA synthesis and normal functioning of the nervous system, normal psychological function and the maintenance of normal liver function."

Front line NHS critical care medical doctor, Dr Krige has both hands-on experience treating large numbers of critically ill COVID-19 patients over the course of the pandemic, and has worked in the field of clinical research. According to Dr Krige, "I agree that acute symptomatic COVID-19 is predominantly an immune-thrombotic disease that, although it gains entry via respiratory epithelium, it then progresses to endothelial damage. The proposed supplement is a combination of various molecules highlighted as important in ameliorating COVID-19 pathology. This has the potential to be an efficient initial option for all those with prolonged COVID-19 symptoms alongside optimising metabolic health and immune health which are interrelated. The latter can be achieved with simple dietary changes including restricting carbohydrates and processed food, time restricted eating, regular movement and optimal sleep. It would be hoped that this would be sufficient for the majority to recover whilst the remainder will need a more tailored approach."

Dr Krige concluded, "Overall, following initial assessment via the primary care practitioner, I think

[this supplement] would be a useful baseline starter for most patients with no safety concerns, however if they didn't progress within a certain timeframe they might need a personalised holistic approach by an appropriately trained clinician."

Registered Dietitian Dr Mabel Blades stated, "From the report it could be seen that each of the nutrients and bioactives which are found in RecoverUp appears to have a possible positive association with the amelioration of the symptoms and underlying adverse pathology found in long-COVID. While all the items in the supplements can be purchased from various sources it is helpful to have the combination provided. Additionally, it is well known there is competition for absorption between iron and zinc and thus to have these provided separately in the AM and PM formulas is helpful."

The AM formula contains 21 active ingredients, including Zinc Picolinate, Vitamins D + K2, C, A, E, ICF Compound (Polyphenols, EGCG, Quercetin), Live Culture & Prebiotic, Astragalus, Ginger, Liquorice, Reishi and Essential Minerals (Selenium, Copper, Manganese). The PM formula contains 12 active ingredients, including FSC Compound (Organic Turmeric, Pure Curcumin, Piperine), Iron (fumarate), B-Vitamins, Choline, Alpha Lipoic Acid, Ashwagandha and an enzyme (Bromelain). In total there are 33 ingredients that support the body in 10 different ways, providing normal support of the immune, gut, liver, oxygen, blood and energy, areas. These are delivered through separate AM and PM sets of capsules, also referred to as 'stacks' by the 'biohacking' community - a method of combining nutritional or food supplement inputs synergistically.

Calum Scott added, "The nutritional ingredients were selected through a rigorous multi-stage nutrient and bioactive selection process audited for efficacy and safety, using vegan or vegetarian sources. Whilst some of the nutrients are used at high amounts, each one was audited and has a confirmed safety profile, taking into account the Department of Health's CoT report guidelines for Safe Upper Limits."

"It can be seen with the formula, for certain key immune supporting nutrients such as vitamin D and zinc we have used considerably higher levels than would be found in a general everyday multivitamin and furthermore we selected forms that clinical trials indicated would be better absorbed and retained in the body, such as zinc picolinate and then further combined these with cofactors to improve absorption into the cells, such as EGCG and Quercetin."

Dr Derbyshire added, "For optimal immune protection and resistance to infections, in the light of the impact of novel infectious strains of pathogenic viruses, micronutrient intakes could be higher than current recommended dietary allowances (RDA), for certain immune-supporting vitamins."

Long COVID is a growing problem. Data from the Office for National Statistics reports that as many as one in five patients have COVID symptoms persisting after five weeks, with one in ten experiencing symptoms for more than 12 weeks. In spite of the fact that some sufferers are now over a year into long term post-COVID illness, there are still few approved treatment pathways for patients leaving many to conduct their own research in order to improve symptoms.

-ENDS-

*In scientific papers entitled, " COVID-19 is, in the end, an endothelial disease" and "COVID-19 – A vascular disease"

Notes to Editors

About Dr Emma Derbyshire BSc, PhD, RNutr (Public Health)
Dr Emma Derbyshire is a Registered Nutritionist (RNutr) and an established scientist within the field of nutrition and public health with a background in Nutritional Biochemistry and over 10 years' experience of working in academia, as a senior lecturer and researcher in human nutrition and physiology. She has published over 150 scientific publications with expertise in Maternal Nutrition, Immunonutrition, Public Health Nutrition and Functional Foods/Components and health.

About Dr Anton Krige MBChB, DIMC, FRCA, FFCM
Dr Krige is a Consultant in Intensive Care Medicine, Anaesthesia & Perioperative Medicine, Cardiopulmonary Exercise Testing Expert, Clinician researcher, NIHR role, Functional Medicine Practitioner/Provider (IFM – AFMCP). Dr Krige has worked as a doctor for the last 26 years, working in critical care for much of that time, with hands-on experience treating large numbers of critically ill COVID-19 patients over the course of the pandemic as part of a large team. He has an academic track record in the areas of analgesia in major surgery and various critical care and perioperative care research themes along with vast experience in driving service improvement at the organisation level. He regularly works with sufferers of CFS/ME using a root cause systems based approach to deliver personalised precision medicine in an integrative and holistic fashion in his private clinic.

About Dr Mabel Blades PhD. B.Sc. (Hons), RD, M.Phil., MIFST., M.B.A., R.S.H.
Dr Mabel Blades is a Registered Dietitian (RD) registered with the HCPC and member of the British Dietetic Association, and has 30 years experience working in hospitals, care homes, prisons and universities. Previously editor of the Journal of Nutrition and Food Science, Dr Blades has written a number of books including 'Nutrition and Health', 'Diabetes Foods, Meds and More', 'Everyday Eating', 'The GI Counter'.

About www.long-covid-recovery.org
'Www.long-covid-recovery.org', based in Edinburgh, UK, searches for and collates helpful science news, treatment approaches and support groups to help people along their road to recovery after Long-COVID.
It also maintains the Facebook page 'Road to Recovery Org'. They are working to raise funding to supply 25,000 free sets of RecoverUp nutritional food supplements (https://www.recoverup.co.uk/pages/longcovidsubsidy) to help people all across the UK recover from Long-COVID and regain quality of life.

For general inquiries, please contact via email hello@long-covid-recovery.org or Facebook page https://www.facebook.com/RoadtoRecoveryOrg/
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