COVID-19: NATURAL IMMUNE SUPPORT – AN EVIDENCE-BASED INFORMATION LEAFLET

Many natural remedies can support the immune system. Other than Vitamin C, Vitamin D and Zinc (see separate leaflets), some of the better-known remedies with evidenced benefit for COVID-19 immune support are included below. Please also refer to our Natural Anti-Virals leaflet.

Diet: When it comes to diet, it is firstly important to focus on what not to eat: principally sugar and sugar-sweetened drinks and ultra-processed foods such as refined grains (packaged bread, breakfast cereals), chocolate and soft drinks[1,2,3;] studies also show that a diet high in unsaturated fats, principally those found in vegetable, nut and seed oils, was associated with more severe COVID-19[4,5]. By contrast, a diet with plenty of protein (particularly fish), healthy plant foods and fermented foods was associated with lower risk and severity of COVID-19[6,7,8].

Exercise: The right level of physical activity is important for immune health, with moderate levels being able to lower inflammatory markers while intense exercise can increase them[9,10]; a meta-analysis and systematic reviews found that regular exercise improved immune function[11,12,13]. COVID-19 patients who were consistently inactive had a greater risk of hospitalisation, transfer to intensive care and death compared to active patients[14].

Gut health: The balance between beneficial and harmful gut bacteria and their diversity is crucial to immune health as it can be a source of inflammation[15,16,17]. As well as eating plenty of dietary fibre to feed the beneficial bacteria[18], supplementing probiotics can help regulate the immune system and protect tissues during severe viral respiratory infections[19] and have an anti-viral effect[20]. They are also associated with a lower risk of catching COVID-19[21].

Selenium: Several studies show that lower selenium levels correlated with the severity and death rate of viral infections and greater inflammation[22,23,24,25]. This was also seen in COVID-19 patients, where those with lower selenium levels had higher inflammatory markers, and lower blood oxygen levels and were more at risk of death[26,27,28,29,30,31,32,33,34]. Furthermore, the COVID virus is known to suppress a number of selenoproteins[35]. Dosage: 200 micrograms/day.

Glutathione (GSH) & N-Acetylcysteine (NAC): GSH and NAC have strong antiviral properties[36,37,38]. Lower glutathione levels were found in COVID patients, and particularly in those with fever, those who remained longer in hospital or ICU and those who died[39,40,41,42]. Low glutathione levels were also associated with the risk of severe COVID-19, degree of lung damage and risk of blood clots[43].
N-acetylcysteine, which promotes glutathione synthesis, given at an oral dose of 1200mg/day resulted in lower rates of progression to severe respiratory failure, need for mechanical ventilation and death in COVID-19 patients[44,45] .
GSH dosage: prevention, up to 2,500mg/day; treatment, up to 6000mg/day.
NAC dosage: prevention, 500-1000mg/day; treatment, up to 1200mg/day.

Vitamin A: Vitamin A is an immune enhancer that can trigger antibody responses and increase immune cells[46]; vitamin A levels drop during various types of infection and multiple studies have shown that vitamin A supplementation improves resistance and recovery rate[47]. Most hospitalised COVID patients had low levels of vitamin A, particularly those in ICU with respiratory failure. Lower levels correlated with increased levels of inflammatory markers and other markers of acute COVID infection and were particularly associated with development of acute respiratory distress syndrome, transfer to ICU, need for intubation and death[48,49,50,51]. Dosage: up to 25,000 IU/day in the short term, reducing to 10,000 IU/day.

Omega-3 fatty acids: Omega-3 fats, mainly found in oily fish, can improve immune function and are recognised anti-inflammatories; they can also inactivate the type of virus causing COVID-19[52,53,54,55] and lower risk of thrombosis, seen in severe COVID-19[56,57]. Higher intake of omega-3 fatty acids was associated with a lower risk of COVID-19 infection[58], while patients with COVID-19, particularly those who died and/or were ventilated, exhibited low levels of omega-3 fats[59]. COVID patients receiving omega-3 showed a reduction in most clinical symptoms and levels of inflammatory markers and improved survival rate and biochemistry[60,61]. Dosage: there is no established upper limit but high doses can increase bleeding.

Diet

[1] https://pubmed.ncbi.nlm.nih.gov/33977196/
[2] https://nutrition.bmj.com/content/early/2021/05/18/bmjnph-2021-000272
[3] https://covid.joinzoe.com/post/covid-risk-diet-quality-webinar
[4] https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC7250771/
[5] https://pubmed.ncbi.nlm.nih.gov/33868029/
[6] https://gut.bmj.com/content/70/11/2096
[7] https://nutrition.bmj.com/content/early/2021/05/18/bmjnph-2021-000272
[8] https://covid.joinzoe.com/post/covid-risk-diet-quality-webinar

Exercise

[9] https://pubmed.ncbi.nlm.nih.gov/31992987/
[10] https://pubmed.ncbi.nlm.nih.gov/29408464/
[11] https://pubmed.ncbi.nlm.nih.gov/34571745/
[12] https://pubmed.ncbi.nlm.nih.gov/33378057/
[13] https://pubmed.ncbi.nlm.nih.gov/32294922/
[14] https://bjsm.bmj.com/content/55/19/1099

Gut health

[15] https://www.bmj.com/company/newsroom/make-up-of-gut-microbiome-may-influence-covid-19-severity-and-immune-response/
[16] https://pubmed.ncbi.nlm.nih.gov/28407483/
[17] https://www.ncbi.nlm.nih.gov/pubmed/27751165
[18] https://www.ncbi.nlm.nih.gov/pubmed/24390308
[19] https://pubmed.ncbi.nlm.nih.gov/34654347/
[20] https://pubmed.ncbi.nlm.nih.gov/34442684/
[21] https://www.medrxiv.org/content/10.1101/2020.11.27.20239087v1

Selenium

[22] https://pubmed.ncbi.nlm.nih.gov/18384097/
[23] https://pubmed.ncbi.nlm.nih.gov/12730444/
[24] https://pubmed.ncbi.nlm.nih.gov/22381456/
[25] https://www.liebertpub.com/doi/10.1089/ars.2011.4145
[26] https://www.mdpi.com/2072-6643/12/7/2098
[27] https://academic.oup.com/ajcn/article/111/6/1297/5826147
[28] https://pubmed.ncbi.nlm.nih.gov/34203015/
[29] https://pubmed.ncbi.nlm.nih.gov/34195940/
[30] https://pubmed.ncbi.nlm.nih.gov/34011281/
[31] https://pubmed.ncbi.nlm.nih.gov/33920813/
[32] https://pubmed.ncbi.nlm.nih.gov/33321395/
[33] https://pubmed.ncbi.nlm.nih.gov/33126054/
[34] https://www.mdpi.com/2072-6643/13/10/3304/htm
[35] https://www.sciencedirect.com/science/article/pii/S0278691521003197?via%3Dihub

Glutathione and N-acetylcysteine

[36] https://pubmed.ncbi.nlm.nih.gov/8540746
[37] https://doi.org/10.1016/j.virol.2013.07.034
[38] https://pubmed.ncbi.nlm.nih.gov/16787218
[39] https://doi.org/10.1021/acsinfecdis.0c00288
[40] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8127525/
[41] https://pubmed.ncbi.nlm.nih.gov/33614035/
[42] https://pubmed.ncbi.nlm.nih.gov/33562403/
[43] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8455204/
[44] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7910139/
[45] https://www.tandfonline.com/doi/abs/10.1080/23744235.2021.1945675

Vitamin A

[46] https://academic.oup.com/cid/article-abstract/19/3/489/459328?redirectedFrom=fulltext
[47] https://www.mdpi.com/2077-0383/7/9/258
[48] https://www.medrxiv.org/content/10.1101/2021.01.30.21250844v1
[49] https://www.mdpi.com/2218-1989/11/9/565/htm
[50] https://www.mdpi.com/2072-6643/13/7/2173
[51] https://www.mdpi.com/2218-1989/11/9/565

Omega-3 fatty acids

[52] https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC8166046/
[53] https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC7779984/
[54] https://doi.org/10.3390/nu11122974
[55] https://pubmed.ncbi.nlm.nih.gov/33664446/
[56] https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC7779984/
[57] https://doi.org/10.1016/j.prostaglandins.2018.09.005
[58] https://pubmed.ncbi.nlm.nih.gov/34308122/

[59] https://pubmed.ncbi.nlm.nih.gov/34360016/
[60] https://pubmed.ncbi.nlm.nih.gov/34516692/
[61] https://pubmed.ncbi.nlm.nih.gov/33781275/