

THE LIFEHUB APPROACH TO COVID-19

A Guide To Optimising Your
Immunity, Health & Wellness



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Disclaimer: These recommendations have been designed to support the immune system and are not meant to replace the guidance of your own doctor or other licensed healthcare practitioner. The information and products are meant for general use only and are not intended to diagnose, cure, treat, or prevent any disease in isolation or provide stand alone medical advice. Any decision to use supplements to support your specific needs should be considered in partnership with your licensed healthcare practitioner. Any questions you may have concerning your use of drugs, medications, or supplements should be directed to your healthcare provider.



A LETTER FROM DR JONATHAN SEAH

Chairman, LifeHub & LifeClinic

Firstly, as one of my favorite books says on its cover: **DON'T PANIC!**

Take a deep breath and let it out slowly. If you didn't just start coughing or feel breathless, it is very likely that you don't currently have a COVID-19 infection, or if you do, you are one of the majority that will either have no symptoms at all, or only mild symptoms.

The goal of this guide is to help increase the chances of this good outcome for you, with advice from our doctors, nutritionists, and other healthcare practitioners (and in this era of so much fake news, we have made an effort to provide references from credible research for our recommendations).

While there is certainly much we still don't know about COVID-19, there are three things we do know:

1. There is currently no recognized vaccination against, or cure for COVID-19.
2. It is possible to catch the infection from folks that show no symptoms at all.
3. The younger you are¹, the higher your chances of having no or mild symptoms and recovering fully. The opposite is unfortunately also true – the older you are, or the more chronic diseases you have (such as high blood pressure and other cardiovascular diseases, diabetes, and cancer) that reduce your body's ability to effectively fend off an infection, the higher your chances will be of having severe symptoms and yes, dying from it^[1].

It is therefore highly likely that every one of us will get COVID-19 at some point^{[2][3][4]}, and in the absence of a cure it would be preferable to be in good general health and for our body's immune systems to be working optimally BEFORE we get infected, in order to increase the likelihood of having no or mild symptoms and a full recovery.

I graduated as a medical doctor almost 30 years ago, and for many years I ran regular hospitals and clinics. However, when my own wife, an uncle, and an aunty got seriously sick a few years ago, I saw they did much better when we combined functional medicine treatments with some science-based complementary therapies from around the world, such as optimized diets and nutritional supplements, detoxification, hyperthermia, colonic hydrotherapy and intravenous treatments – some of which could even have helped them avoid their illnesses if started earlier when they were still healthy. This is why my co-founders and I created LifeClinic and LifeHub, where we call this combined approach "Integrative Medicine", and where our vision is "Optimal Health for All", with a primary goal to help prevent people from getting seriously sick in the first place, and to improve their ability to work and play. We believe this is currently also one of the best approaches for COVID-19.

Do consult with your doctor before you try any of the suggestions in this guide, or you can also come visit us to learn more! Our flagship facility is in Central Hong Kong, and many of our products and consultation services are also available online at our website.

**Yours in good health,
DR JONATHAN SEAH**

MB, BCh, BAO (Dublin); MBA (Harvard).

April 29, 2020

¹As long as you are not still a newborn or infant.

[1] Schraping, N. Could We Be Living With COVID-19 Forever? 2020 <https://www.discovermagazine.com/health/could-we-be-living-with-covid-19-forever>

[2] Yang C, Jin Z. An Acute Respiratory Infection Runs Into the Most Common Noncommunicable Epidemic—COVID-19 and Cardiovascular Diseases. *JAMA Cardiol*. Published online March 25, 2020. doi:10.1001/jamacardio.2020.0934

[3] Cohut, M. SARS-CoV-2 may be here to stay. 2020. <https://www.medicalnewstoday.com/articles/covid-19-may-be-here-to-stay>

[4] Richardson S, Hirsch JS, Narasimhan M, et al. Presenting Characteristics, Comorbidities, and Outcomes Among 5700 Patients Hospitalized With COVID-19 in the New York City Area. *JAMA*. Published online April 22, 2020. doi:10.1001/jama.2020.6775

SUMMARY RECOMMENDATIONS

LEVEL 1 Lifestyle Hacks

- Wash your hands frequently (>20 sec)
- Sanitize your phone and surfaces you touch often (with minimum 75% alcohol)
- Avoid touching your face
- Practice social distancing (>1.5m apart)
- Don't smoke
- Get good sleep (>8 hours every night)
- Drink plenty of fluids and avoid alcohol
- Engage in regular but not extreme exercise
- Try for fresh air instead of re-circulated air
- Avoid fasting longer than 24 hours
- Wear face masks in public places
- Avoid dietary sugars & dairy
- Manage stress (e.g. meditation)

LEVEL 2 The Essentials

- Vitamin C 1000-2000 mg**
- Vitamin A 3,000-5,000 IU (but not if you are pregnant; safest to take in the form of 3 cod liver oil capsules/teaspoons)
- Vitamin D 2000 IU
- Zinc 30 mg (glycinate, gluconate, acetate, citrate or sulphate. Not oxide)
- Copper 2mg (unless you have cancer or Wilson's Disease)
- Probiotics 30-50 billion CFU's

** Intravenous has best absorption

LEVEL 3 Advanced Supplements

- Selenium 200 mcg
- Quercetin 150 mg
- S-Acetyl or Liposomal Glutathione 200 mg
- Elderberry 700-1000 mg
- Allicin 180 mcg (or raw garlic)
- Astragalus Membranaceus /Propinquus

LEVEL 4 Other Hacks

- Intravenous supplements
- Colonic Hydrotherapy
- Acupuncture
- Infra-red therapy & hyperthermia
- Reduce heavy metals and toxins from your body

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GET TO KNOW YOUR IMMUNE SYSTEM

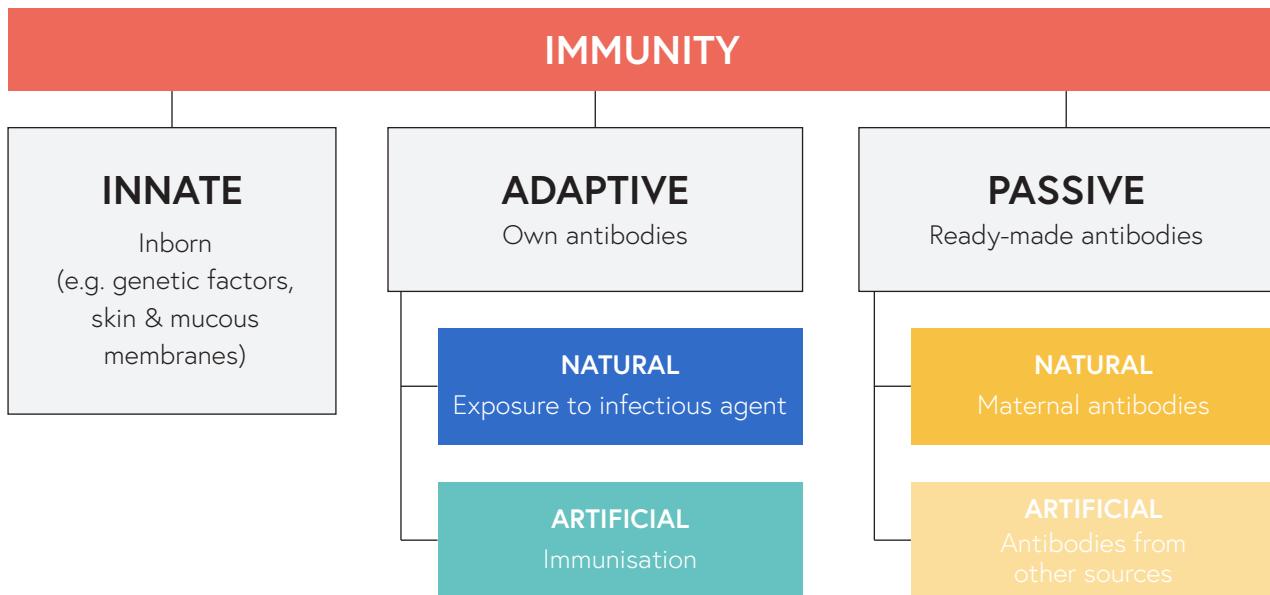
Our immune system helps protect our body from infection by providing a surveillance system that recognises and defends us against daily threats to our health.

There Are Three Main Types Of Immunity

Innate: The natural resistance we are born with. These include non-specific defences like the physical and chemical barriers of our skin and mucous membranes, as well as our immune system cells that attack foreign cells in the body.

Adaptive: Specific defences created after an initial response to a pathogen, either from exposure to an infection or through a vaccine. This leads to a quicker and stronger response to later encounters with that same pathogen.

Passive: Immunity we acquire when we are given ready-made antibodies from outside the body. This results in a temporary protection against a pathogen.



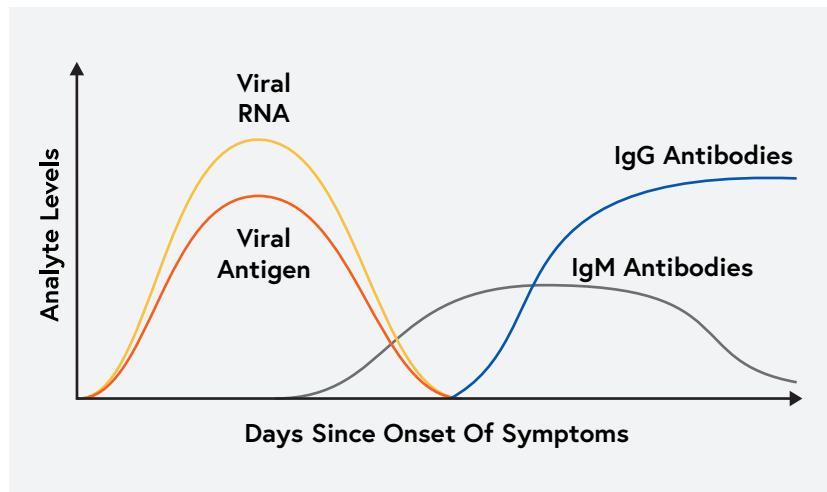
COVID-19 AND YOUR IMMUNE SYSTEM

In Coronavirus Disease (COVID-19), or any other viral threat, our body's first active response is aimed at stopping the spread of the virus within our system. It does this by using white blood cells, including Natural Killer (NK) cells, macrophages and neutrophils.

Cytokines (messenger proteins) are also released, causing inflammation which makes the surrounding blood vessels more porous, to enable easier removal of the virus.

In COVID-19 this is the response in those that suffer more severe symptoms:

1. Rapid replication of the virus in the airways between day 5-10.
2. In serious cases, excessive rise in cytokines ("Cytokine Storm") causes over-inflammation of the airways resulting in breathing difficulties.



And so, to optimise immunity against COVID-19, we need to consider how to support both the innate and adaptive immune responses, while minimising the potential excessive inflammation associated with these responses:

Ensure the primary defence lines are healthy

Support system to mount a good initial response and keep viral count low

Reduce inflammatory pathways



ASSESSING YOUR HEALTH RISKS

With any disease there are various risk factors involved. COVID-19 is a new virus so there is much that scientists are still trying to understand. However, based on our current understanding there are some factors that increase the risk of contracting the disease and of developing more serious symptoms. Understanding your potential risk profile is key to developing an effective prevention protocol.

Risk factors that we have no control of, we call **non-modifiable risk factors**, while the ones we can change with our behaviours are called **modifiable risk factors**.

NON-MODIFIABLE RISKS

Age

Elderly populations tend to be hit hardest by respiratory infections like the flu, as well as other ailments. Sadly, [data from China](#) analysing 72,000 COVID-19 cases showed the overall case fatality rate (CFR) to be around 2.3%, but as high as 15% for those aged 80 and above. A possible reason for this is that our body's immune system typically becomes [less robust as we age](#), resulting in a lowered capability to fight off infection.

Zhang, Y. The Epidemiological Characteristics of an Outbreak of 2019 Novel Coronavirus Diseases (COVID-19) — China, 2020 <http://weekly.chinacdc.cn/en/article/id/e53946e2-c6c4-41e9-9a9bfea8db1a8f51>
Montecino-Rodriguez, Encarnacion et al. "Causes, consequences, and reversal of immune system aging." The Journal of clinical investigation vol. 123,3 (2013): 958-65. doi:10.1172/JCI64096

Other Health Problems

The presence of pre-existing chronic health problems increases the susceptibility to COVID-19. The following conditions are of particular note: **chronic lung disease, asthma, diabetes, coronary heart disease and hypertension**. These conditions are inflammatory and appear to increase the severity of the infection. You can assess your inflammatory response by testing your **C-Reactive Protein (CRP)** levels with your physician. It is suspected that patients with heart disease or diabetes have higher case fatality rates ([10% and 7% respectively](#)). It is also possible that even if you do not have diabetes, **poor blood sugar control (which can be determined by an insulin or postprandial glucose test) may also increase your risk.**

Zhang, Y. The Epidemiological Characteristics of an Outbreak of 2019 Novel Coronavirus Diseases (COVID-19) — China, 2020 <http://weekly.chinacdc.cn/en/article/id/e53946e2-c6c4-41e9-9a9bfea8db1a8f51>

Compromised Immunity

There are certain individuals who have a weakened immune system that make them vulnerable to infection. These include people with **cancer, auto-immune diseases, HIV or AIDS, and those taking immunosuppressant drugs (typically organ transplant patients) or medications that interfere with immune function such as corticosteroids**. These individuals should take additional precautions.



MODIFIABLE RISKS

Smoking

People who smoke have an increased risk of COVID-19 infection. Firstly, smoking may increase the likelihood of contracting the virus by hand-to-mouth contact. Secondly, smoking has been shown to compromise **respiratory function** in adults and is known to increase the risk of developing chronic **respiratory diseases**. Even chronic smokers who quit smoking continue to have a steeper **decline in lung function** compared to non-smokers, increasing the likelihood of more severe symptoms. This has been **theorised** as the reason why there is higher COVID-19 fatality rates in men compared to women.

Burchfiel CM1, et al. Effects of smoking and smoking cessation on longitudinal decline in pulmonary function. 1995. Am J Respir Crit Care Med. 1995 Jun;151(6):1778-85.
Kenfield SA., et al. Burden of smoking on cause-specific mortality: application to the Nurses' Health Study. Tob Control. 2010 Jun; 19(3): 248-254. doi: 10.1136/tc.2009.032839
Statista. Fatality rate of novel coronavirus COVID-19 in China as of February 11, 2020, by gender. 2020. <https://www.statista.com/statistics/1099654/china-wuhan-coronavirus-covid-19-fatality-rate-by-gender/>



Poor Diet

Diet plays a large role in ensuring optimal immune function. Malnutrition or nutritional deficiencies can result in **lowered immunity** and reduced resistance to infection. Adequate macro-nutrients (fat, protein, carbohydrates, water) and micronutrients (vitamins and minerals) are essential for a range of immune functions including producing immune cells, regulating inflammation, and recognizing and killing viruses. Highly inflammatory foods such as sugar and trans-fats are also detrimental to our immune function and should be minimised.

Karacabey K., et al. The Effect of Nutritional Elements on the Immune System. J Obes Wt Loss Ther 2:152. doi:10.4172/2165-7904.1000152

Alcohol

Alcohol affects several mechanisms to impair our **immune function**. Chronic alcohol use has been linked to a **3 to 7-fold** increase in susceptibility to viral infection, as well as more **severe outcomes** for respiratory infections. However, even if you are not a chronic alcohol drinker, a single binge event (defined as 4 units of alcohol or more) can cause disruption to **immune homeostasis** and impairs recovery from physiological **damage**. Alcohol also interferes with our **gut microbiome** and our **deep sleep**, both of which are essential components of optimal immune health.

Sarkar, D., et al. Alcohol & The Immune System. Alcohol Res. 2015; 37(2): 153–155.

Saitz, R., et al. The impact of alcohol-related diagnoses on pneumonia outcomes. Arch Intern Med. 1997 Jul 14;157(13):1446-52.

Barr, T., et al. Opposing Effects Of Alcohol On The Immune System. Published in final edited form as: Prog Neuropsychopharmacol Biol Psychiatry. 2016 Feb 4; 65: 242–251. Published online 2015 Sep 14. doi: 10.1016/j.pnpbp.2015.09.001

Engen, P., et al. The Gastrointestinal Microbiome. Alcohol Effects on the Composition of Intestinal Microbiota. Alcohol Res. 2015; 37(2): 223–236.

Ebrahim IO1, et al. Alcohol and sleep I: effects on normal sleep. Alcohol Clin Exp Res. 2013 Apr;37(4):539-49. doi: 10.1111/acer.12006. Epub 2013 Jan 24.



BOOST YOUR IMMUNE SYSTEM

Your body's immune function is a product of many health parameters: from nutritional support to gut integrity, from diet to sleep. Maximising your immune defence against COVID-19 requires an integrated lifestyle approach. In many ways, there has never been a better time to reassess your lifestyle choices and take steps towards **optimising your health**.

With a team of over 30 healthcare professionals, LifeHub operates the largest integrative medical wellness facility in Hong Kong, which combines the science of functional medicine with scientific complementary therapies. We are the first wellcare company - where our primary goal is to help prevent you from getting seriously sick in the first place, to help you live longer, look better, and to improve your ability to work and play.

Since "**prevention is better than cure**", our team is delighted to share some lifestyle hacks to improve your immunity.



DIETARY HACKS

We all know that nutrition plays an integral role in our health. What we eat affects each and every one of our cells, translating to how well our body functions and how we feel. Conversely, not getting enough nutrients can make us more vulnerable to infection.

Good dietary patterns can help us biohack our pathways to control inflammation, stabilise important hormones, modulate internal stress, strengthen our gut, and support circulation — all to create the best defences against infection.

The Basics

Top Tips From LifeHub Nutritionists

- Reduce processed foods, [sugar](#) & [alcohol](#)
- Moderate [coffee](#) to 1 cup per day
- Drink plenty of [fluids](#) including water and herbal teas like green tea which is high in catechins and antioxidants
- Fill your plate with [nutrient-dense](#) foods

- If practising intermittent fasting (IF) or time-restricted eating, don't fast for more than 24 hours because it increases the risk of nutritional deficiencies^[1].
- Do not practice extremely calorie-restrictive diets that limit intake of nutrients or eliminate essential food groups^{[2][3]}.

Maioli, T.U., Gonçalves, J.L., Miranda, M.C.G. et al. High sugar and butter (HSB) diet induces obesity and metabolic syndrome with decrease in regulatory T cells in adipose tissue of mice. *Inflamm. Res.* 65, 169–178 (2016). doi: 10.1007/s00011-015-0902-1

Sakar, D., et al. Alcohol & The Immune System. *Alcohol Res.* 2015; 37(2): 153–155.

AI Reef T., et al. Caffeine: Well-known as psychotropic substance, but little as immunomodulator. *Immunobiology.* 2018 Dec;223(12):818-825. doi: 10.1016/j.imbio.2018.08.011. Epub 2018 Aug 20.

Popkin, B., et al. Water, Hydration and Health. *Nutr Rev.* 2010 Aug; 68(8): 439–458.

doi:10.1111/j.1753-4887.2010.00304.x

Karacabey K., et al. The Effect of Nutritional Elements on the Immune System. *J Obes Wt Loss Ther* 2:152. doi:10.4172/2165-7904.1000152

Zenz, G., et al. Intermittent Fasting Exacerbates the Acute Immune and Behavioral Sickness Response to the Viral Mimic Poly(I:C) in Mice. *Front Neurosci.* 2019; 13: 359.

Published online 2019 Apr 17. doi: 10.3389/fnins.2019.00359

Leibniz Institute on Aging – Fritz Lipmann Institute (FLI). "The up- and downside of caloric restriction for aging and health." *ScienceDaily.* ScienceDaily, 14 March 2016.

<www.sciencedaily.com/releases/2016/03/160314101759.htm>

Most, J., et al. Calorie restriction in humans: an update. *Ageing Res Rev.* 2017 Oct; 39: 36–45. Published online 2016 Aug 17. doi: 10.1016/j.arr.2016.08.005

Low-Carb Diet

Practice a low-carbohydrate approach: A low-carb dietary approach will reduce the insulin burden on the body, helping to maintain an optimal immune response and keep inflammation low^{[4][5]}.

Reduce

- Rice
- Noodles/Pasta
- Potatoes
- Cakes/Pastries
- Chocolate, Candies, Sugary Snacks
- Sugary Beverages
- High-Sugar Fruits (melon, grapes, mango, pineapple, banana)

Increase

- High-quality Protein
- Healthy Fats (olive oil, coconut oil, oily fish, avocado)
- Lots of Fresh Vegetables
- Low-Sugar Fruits (berries, kiwi, citrus fruits)

Childs, Caroline E et al. "Diet and Immune Function." *Nutrients* vol. 11,8 1933. 16 Aug. 2019, doi:10.3390/nu11081933

Nieman, DC. Influence of carbohydrate on the immune response to intensive, prolonged exercise. *Exerc Immunol Rev.* 1998;4:64–76. PMID: 9644095



Shopping Tips

Don't fall into the processed foods trap. Instead try to balance fresh fruit and vegetables with nutritionist-approved canned, frozen and dried favourites. Also remember to thoroughly wash fruit and vegetables and opt for light cooking (i.e. lightly steamed or blanched) over raw.

Utilise your time at home by getting creative with your cooking. Social media is a treasure-trove for great recipe ideas so we urge you to get inspired and try something new! If you live with others or alone, you can make this a fun group activity (in-person or virtually).

Stocking up on dried or packaged foods to fill your pantry?
Try our nutritionist-approved swaps:

Instead of...	Try this!	Why?
White Rice	Quinoa, wild rice, buckwheat, barley	Higher fiber, higher protein, less processed, higher nutritional value
Canned Chickpeas, Lentils, Beans etc	Dried Chickpeas, Lentils, Beans etc (preferably soaked overnight)	Less sodium and preservatives, better nutrient bioavailability
Canned fruit like berries or vegetables like peas	Fresh or frozen fruit or veg	No additives like sugar, sodium, preservatives
Tomato Pasta Sauces	Organic Tomato Passata	No artificial flavourings, preservatives, sodium, sugar (simply add your own seasonings)
Instant Noodles or Pasta	Zucchini Noodles or Quinoa / Brown Rice noodles	Less sodium, MSG, preservatives. Higher nutrient-value, higher in fiber
Processed Meats: hot dogs, frozen patties, cured meats/sausages etc	Good Quality Meats: grassfed meat, wild-caught frozen fish, canned fish in EVOO	Less sodium, additives, toxins, oxidised fats. Healthy fats, better cuts, clean and sustainable sources



NUTRITIONAL SUPPLEMENTS

At LifeHub, we stand by the old adage "prevention is better than cure". We like to build on a foundation of a healthy diet and lifestyle by also incorporating high-quality, evidence-based supplements.

Supplements can be used to:

- A. **Fill in nutritional gaps**, for example if you recognize your diet may not supply adequate levels of zinc for healthy immunity
- B. **Counteract negative lifestyle effects**, for example by adding more magnesium to offset a stressful period
- C. **Biohack biological pathways**, for example by increasing your vitamin C and D intake during the flu-season
- D. **Help treat ailments**, for example by using natural herbs and high-dose nutrients to recover faster from certain illnesses

In addition to eating healthy, keeping active, sleeping well and managing mental health, high-quality concentrated nutrients help boost your immune system. These following supplements are suggested by our team of doctors, practitioners and nutritionists during this global pandemic.

When selecting supplements, it is recommended to choose pharmaceutical-grade to ensure quality, purity, higher bioavailability, and third-party testing for safety.



THE ESSENTIALS

These essential supplements provide full-spectrum support for proper immune function. Collectively, vitamins **A**, **C**, **D** and **zinc** help regulate immune balance to prevent respiratory infections, modulate inflammation, and support white cell production and function. Meanwhile, probiotics are needed for healthy gut function to support immunity.

Mora, J Rodrigo et al. Vitamin effects on the immune system: vitamins A and D take centre stage. *Nature reviews. Immunology* vol. 8,9 (2008): 685-98. doi:10.1038/nri2378
Carr, AC, et al. Vitamin C and Immune Function. *Nutrients*. 2017 Nov 3;9(11). pii: E1211. doi: 10.3390/nu911211.
Prasad, Ananda S. "Zinc in human health: effect of zinc on immune cells." *Molecular medicine (Cambridge, Mass.)* vol. 14,5-6 (2008): 353-7. doi:10.2119/2008-00033.Prasad

Vitamin C 1000-2000 mg^[1]

Vitamin C is essential for various key elements of our immune defence against viruses. Firstly, it supports the epithelial barrier of our airways, skin and gut to prevent pathogens from entering our body. If they do get in, Vitamin C enhances the ability of neutrophils, which are the white blood cells that find, engulf and destroy viruses. And after that, Vitamin C is even considerate enough to help us remove the spent cells to protect our normal lung tissue against any damage. In these ways, Vitamin C has been shown to both help prevent the incidence and shorten the duration of the common cold.

In China and a few places in America, high doses of intravenous Vitamin C have been used as part of the treatment protocol to treat some ill and hospitalised COVID-19 patients. Early clinical studies^[2] have shown it may help to prevent the lungs filling up with inflammatory cytokines and fluid in critical cases. On-going trials^[3] are now taking place to see if high doses of IV Vitamin C can reduce the time spent on ventilators.

[1] Fisher BJ, Kraskauskas D, Martin EJ, et al. Mechanisms of attenuation of abdominal sepsis induced acute lung injury by ascorbic acid. *Am J Physiol Lung Cell Mol Physiol*. 2012;303(1):L20-L32. doi:10.1152/ajplung.00300.2011

[2] Fisher BJ, Seropian IM, Kraskauskas D, et al. Ascorbic acid attenuates lipopolysaccharide-induced acute lung injury. *Crit Care Med*. 2011;39(6):1454-1460. doi:10.1097/CCM.0b013e3182120cb8

[3] Clinical Trials.gov: Vitamin C Infusion for the Treatment of Severe 2019-nCoV Infected Pneumonia: <https://clinicaltrials.gov/ct2/show/NCT04264533>



Vitamin A 3000-5000 IU^{[4]*}

An important role of Vitamin A is maintaining the health of our mucosal barrier, which lines our lungs and throat. This barrier is our first line of defence by acting as a physical barrier as well as secreting substances to deter infection. Vitamin A is also crucial to activate and potentiate the adaptive immune system, responsible for developing antibodies to fight disease. Moreover, the onset of any viral or bacterial infection reduces Vitamin A levels very rapidly, therefore being protected prior to infections with sufficient levels can reduce incidence and severity of infections.

** Not suitable if you are pregnant; safest to take in the form of 3 cod liver oil capsules/teaspoons.*

[4] Pinnock CB, Douglas RM, Badcock NR. Vitamin A status in children who are prone to respiratory tract infections. *Aust Paediatr J* 1986;22:95–99.
Beard HH. The prophylactic effect of vitamins A and D upon the prevention of the common cold and influenza. *J Am Diet Assoc* 1934;10:193–199.

Vitamin D 2000 IU^[5]

Vitamin D helps prevent respiratory tract infections, both bacterial or viral. Essential for the cells of the epithelial barrier that lines our lungs and throat, it has been suggested that the relatively low levels of Vitamin D in winter months might explain the relatively high incidence of influenza in winter. Some double-blind research has shown a decrease in incidence and/or severity of colds and other respiratory illnesses following Vitamin D supplementation.

Our white blood cells have Vitamin D3 receptors on their surfaces to promote their health and maturation. Studies have shown that optimal blood levels of vitamin D3 are around 25-80ng/dL. Your functional medicine practitioner or integrative doctor can help check your Vitamin D levels with a simple blood test.

[5] Cannell JJ, Vieth R, Umhau JC, et al. Epidemic influenza and vitamin D. *Epidemiol Infect* 2006;134:1129–1140.
Aloia JF, Li-Ng M. Re: epidemic influenza and vitamin D. *Epidemiol Infect* 2007;135:1095–1096.
Camargo CA Jr, Ganmaa D, Frazier AL, et al. Randomized trial of vitamin D supplementation and risk of acute respiratory infection in Mongolia. *Pediatrics* 2012;130:e561–567.
Grant CC, Kaur S, Waymouth E, et al. Reduced primary care respiratory infection visits following pregnancy and infancy vitamin D supplementation: a randomised controlled trial. *Acta Paediatr* 2015;104:396–404.
Bergman P, Norlin AC, Hansen S, et al. Vitamin D3 supplementation in patients with frequent respiratory tract infections: a randomised and double-blind intervention study. *BMJ Open* 2012;2:e001663.



Zinc 30 mg^[6]

(Zinc Glycinate, Gluconate, Acetate, Citrate, or Sulphate)

Zinc was seen to target different biological functions of the SARS virus, and has been shown to reduce the incidence of lower respiratory tract infections such as pneumonia, which just so happens to be one of the complications of COVID-19. It appears to do this by playing an important role in the innate immune response. Again, this is the body's immediate response within the first few hours when initially exposed to a pathogen, and is vital in determining the severity and duration of an infection. Zinc supports the activation of natural killer (NK) cells and macrophages, and also interferes with the virus replication process. In the mucous membranes lining the respiratory system, zinc helps to protect the surface cells from being attacked by viruses and gaining entry into the body.

[6] te Velthuis, Aartjan & van den Worm, Sjoerd & Sims, Amy & Baric, Ralph & Snijder, Eric & Hemert, Martijn. (2010). Zn Inhibits Coronavirus and Arterivirus RNA Polymerase Activity In Vitro and Zinc Ionophores Block the Replication of These Viruses in Cell Culture. *PLoS pathogens*. 6. e1001176. 10.1371/journal.ppat.1001176.

Godfrey JC, Conant Sloane B, Smith DS, et al. Zinc gluconate and the common cold: a controlled clinical study. *J Int Med Res* 1992;20:234–246.

Eby GA, Davis DR, Halcomb WW. Reduction in duration of common colds by zinc gluconate lozenges in a double-blind study. *Antimicrob Agents Chemother* 1984;25:20–24.

Prasad AS, Beck FWJ, Bao B, et al. Duration and severity of symptoms and levels of plasma interleukin-1 receptor antagonist, soluble tumor necrosis factor receptor, and adhesion molecules in patients with common cold treated with zinc acetate. *J Infect Dis* 2008;197:795–802.

Probiotics 30-50 Billion CFUs

Maintaining good gut health is critical for a strong immune system. Our gastrointestinal system has trillions of microorganisms that live in harmony with us (your "gut biome"). They not only protect against harmful pathogens, but also are a major "training ground" for our immune system. With modern living characterized by too much stress, refined carbohydrates, pollutants, medications and antibiotics, this protective lining can be severely weakened. Probiotics strengthen this barrier and can activate various protective immune factors such as IgA antibodies, cytotoxic T-cells and antimicrobial proteins. Your functional medicine doctor can help check the health of your "gut biome" with a stool test.

Donghyun Kim1, et al. The interplay between host immune cells and gut microbiota in chronic inflammatory diseases. *Experimental & Molecular Medicine* (2017). 49, e339; doi:10.1038/emm.2017.24 & 2017 KSBMB. All rights reserved 2092-6413/17

Rescigno, M., et al. Interactions among dendritic cells, macrophages, and epithelial cells in the gut: implications for immune tolerance. *Current Opinion in Immunology*. Volume 20, Issue 6, December 2008, Pages 669-675. doi.org/10.1016/j.coim.2008.09.007

ADVANCED SUPPLEMENTS

These advanced nutrients offer high-dose antioxidant function and support the use of basic nutrients for an elevated level of protection. Recommended for those with a heightened risk or those who are immunocompromised.

Selenium 200 mcg^[7]

Dietary selenium (Se) is an essential micronutrient that plays a critical role in reducing oxidative stress and balancing both innate and adaptive immune responses. Many studies have found that selenium supplementation has led to an enhancement of both cell-mediated and humoral immune responses.

[7] The Journal of Nutrition, Volume 133, Issue 5, May 2003, Pages 1457S–1459S, doi.org/10.1093/jn/133.5.1457S
Gromer S, Eubel JK, Lee BL, Jacob J. Human selenoproteins at a glance. Cell Mol Life Sci. 2005;62:2414–2437. [PubMed] [Google Scholar]
Spallholz JE, Boylan LM, Larsen HS. Advances in understanding selenium's role in the immune system. Ann N Y Acad Sci. 1990;587:123–139. [PubMed] [Google Scholar]
Hawkes WC, Kelley DS, Taylor PC. The effects of dietary selenium on the immune system in healthy men. Biol Trace Elem Res. 2001;81:189–213. [PubMed] [Google Scholar]

Quercetin 150 mg^[8]

Quercetin is a type of polyphenol, from the flavonoids subgroup. Its main natural sources in food are vegetables including onions (the most studied quercetin-containing food), and broccoli; fruit (apples, berry crops, and grapes); some herbs; tea; and wine. Quercetin is known for its antioxidant activity and anti-allergic properties characterized by stimulation of the immune system, modulation of inflammatory responses, and antiviral and anti-histamine activity.

[8] Micek J, Jurikova T, Skrovankova S, Sochor J. Quercetin and Its Anti-Allergic Immune Response. Molecules. 2016;21(5):623. Published 2016 May 12. doi:10.3390/molecules21050623

S-Acetyl Glutathione 200 mg^[9] (or Liposomal Glutathione)

Glutathione is a tripeptide that is normally produced in your liver. For the immune system the protective activity of glutathione is two-fold – it enhances the activity of immune cells and also functions as the body's master antioxidant, helping reduce oxidative damage. Glutathione enhances the activity of our immune cells by strengthening T-cell activity, which is important for fighting bacteria and viruses. It also helps to balance the immune system by reducing autoimmunity and over-reactivity that can lead to allergies.

A lack of adequate glutathione can make your body more susceptible to environmental toxins, oxidative damage, and bacterial and viral infections. Foods that provide the building blocks to make glutathione include cruciferous vegetables like broccoli, cauliflower, bok choy and cabbage.

[9] Front. Immunol., 29 September 2017 | doi.org/10.3389/fimmu.2017.01239



SUPERFOOD SPICES & HERBS

These powerful herbs have been shown to help prevent some viral infections by blocking viral attachment and entry into our cells. They may also reduce the duration and severity of symptoms, for improved outcomes.

If you're looking for some potent foods to boost your immunity and deter viruses, look no further than your pantry staples! Here are our favourites from our naturopathic practitioners.

Ginger (*Zingiber officinale*)

Lemon, honey and ginger water has long been a traditional remedy for the common cold or flu. Research shows this isn't just an old wives' tale. Fresh ginger has been shown to exhibit [antiviral activity](#) against respiratory tract infections by reducing the virus' ability to attach and penetrate our cells. Bioactive compounds of ginger, namely gingerol and shogaol, are also powerful [antioxidant and anti-inflammatory](#) compounds.

Chang, JS, et al. Fresh ginger (*Zingiber officinale*) has anti-viral activity against human respiratory syncytial virus in human respiratory tract cell lines. *J Ethnopharmacol.* 2013 Jan 9;145(1):146-51. doi: 10.1016/j.jep.2012.10.043. Epub 2012 Nov 1.

Dugasani S, et al. Comparative antioxidant and anti-inflammatory effects of [6]-gingerol, [8]-gingerol, [10]-gingerol and [6]-shogaol. *J Ethnopharmacol.* 2010 Feb 3;127(2):515-20. doi: 10.1016/j.jep.2009.10.004. Epub 2009 Oct 13.

Curcumin from Turmeric (*Curcuma longa*)

Turmeric has been making a name for itself in everything from smoothies and marinades to pancakes. A staple of traditional Ayurvedic medicine, curcumin, the main active ingredient found in turmeric, is a highly effective antiviral compound as it is able to target multiple pathways. It has been shown to [inhibit viral replication](#) (to control infection), [prevent lung injury](#) caused by flu viruses, and may even have a more potent [anti-inflammatory effect](#) than aspirin and ibuprofen. Just make sure to pair this one with black pepper for improved bioavailability.

Mathew, D, et al. Antiviral potential of curcumin. *Journal of Functional Foods* Volume 40, January 2018, Pages 692-699. doi:10.1016/j.jff.2017.12.017

Han S, et al. Curcumin ameliorates severe influenza pneumonia via attenuating lung injury and regulating macrophage cytokines production. *Clin Exp Pharmacol Physiol.* 2018 Jan;45(1):84-93. doi: 10.1111/1440-1684.12848. Epub 2017 Oct 3.

Takada Y, et al. Nonsteroidal anti-inflammatory agents differ in their ability to suppress NF-kappaB activation, inhibition of expression of cyclooxygenase-2 and cyclin D1, and abrogation of tumor cell proliferation. *Oncogene.* 2004 Dec 9;23(57):9247-58.

Cloves (*Syzygium aromaticum*)

Cloves were once one of the most expensive spices, starting wars and causing many conflicts throughout history. Full of flavonoids and active compounds like eugenol and eugenin, cloves offer [full-spectrum antimicrobial](#) support to help defend us from a range of nasty invaders, from bacteria like E.coli, to fungus like candida, and many viruses. Cloves also show extraordinary antioxidant properties, [out-performing even some synthetic antioxidants](#) like BHT (a lab-made antioxidant used as a food preservative).

Cortés-Rojas, d., et al. Clove (*Syzygium aromaticum*): a precious spice. *Asian Pac J Trop Biomed.* 2014 Feb; 4(2): 90–96. doi: 10.1016/S2221-1691(14)60215-X

Bamdad, F., et al. Evaluation of phenolic content and antioxidant activity of Iranian caraway in comparison with clove and BHT using model systems and vegetable oil. *International Journal of Food Science & Technology.* Volume 41, Issue s1. doi:10.1111/j.1365-2621.2006.01238.x

Oregano (*Origanum vulgare*)

Greek for "joy of the mountain", oregano was used by the Ancient Greeks for infections, convulsions, and even as an antidote for poisoning. Since then, research into oregano has shown antimicrobial activity, particularly against [fungal and viral infections](#). An [investigation](#) into how oregano has such potent antiviral effects observed that the active component carvacrol is able to enlarge the outer shell of viruses and cause them to disintegrate and be destroyed. Oregano can be taken fresh or dried but the strongest effects come from its oil form.

Leyva-Lopez, N., et al. Essential Oils of Oregano: Biological Activity beyond Their Antimicrobial Properties. *Molecules.* 2017 Jun; 22(6): 989. doi: 10.3390/molecules22060989

Gilling, D., et al. Antiviral efficacy and mechanisms of action of oregano essential oil and its primary component carvacrol against murine norovirus. *Journal of Applied Microbiology* 116(5):1149-1163 · May 2014. doi: 10.1111/jam.12453

Garlic (*Allium sativum*)

Although the jury is still out on warding off vampires, science has proven garlic is a powerhouse for killing [viruses](#) and [bacteria](#). This is due to the compound called allicin, which is released when garlic is crushed or chopped. Fresh and raw is always best so chop some cloves and add it to dips, salad dressings, or sauces. Raw garlic can also be ingested straight (however you may need to build up your tolerance for the taste) or in capsule form.

Weber, ND., et al. In vitro virucidal effects of Allium sativum (garlic) extract and compounds. *Planta Med.* 1992 Oct;58(5):417-23. doi: 10.1055/s-2006-961504

Bayan L.,et al. Garlic: a review of potential therapeutic effects. *Avicenna J Phytomed.* 2014 Jan;4(1):1-14. PMID: 25050296; PMCID: PMC4103721.

Elderberry (*Sambucus nigra* or European elder)

Sambucus nigra or European elder is a plant that has been in use for centuries to help boost our immune system, treat upper respiratory tract infections, and specifically to fight or prevent viral infections. [Studies](#) have shown it can inhibit the early stages of an infection by blocking key viral proteins responsible for both the viral attachment, and entry into the host cells. It can also modulate the post-infectious phase, and prevent viral transmission to other cells.

Torabian, G., et al. Anti-influenza activity of elderberry (*Sambucus nigra*). *Journal of Functional Foods.* 2019; 54: 353 doi: 10.1016/j.jff.2019.01.031

Astragalus (*Astragalus membranaceus* or Huang qi)

Astragalus membranaceus or Huang qi is a Chinese medicine herb that has been used for centuries for colds and flus and to boost the immune system. [Studies](#) have shown that it regulates the body's immune responses, modulating T-helper cells 1&2 in individuals, thus further showing that it has benefits in increasing the amount of immune cells within the body.

Hou, Yu-Chen et al. "Modulatory Effects of Astragalus Polysaccharides on T-Cell Polarization in Mice with Polymicrobial Sepsis." *Mediators of Inflammation* vol. 2015 (2015): 826319. doi:10.1155/2015/826319



INNOVATIVE AND BIOPHYSICAL IMMUNE THERAPIES

IV Nutrient Therapy

IV therapy can send nutrients, electrolytes and antioxidants directly into the bloodstream, which means that these nutrients are more quickly available to be used by our body's cells.

While oral supplements are easily consumed, your body cannot fully absorb the nutrients since they are first processed by your digestive system, and the absorption mechanism is imperfect especially if you have weak digestive health.

When administered intravenously on the other hand, these same **immune-boosting vitamins and other nutrients bypass the digestive system and ensure 100% absorption into your blood.**

For example, providing Vitamin C intravenously allows your body to receive a 100-fold increase in plasma concentrations compared to oral intake. It is also better tolerated, avoiding the gastrointestinal symptoms that can arise with high-dose oral Vitamin C. At these levels, Vitamin C can exhibit powerful immune-boosting and anti-viral effects^[10]. Other high-dose nutrients that have been used for immune function include zinc and glutathione.

IV therapy can be used to detoxify your body, removing harmful free radicals that can contribute to toxin buildup and impaired immune function.

[10] Clinical Trials.gov: Vitamin C Infusion for the Treatment of Severe 2019-nCoV Infected Pneumonia: <https://clinicaltrials.gov/ct2/show/NCT04264533>

Ried, Karin et al. "The acute effect of high-dose intravenous vitamin C and other nutrients on blood pressure: a cohort study." *Blood pressure monitoring* vol. 21,3 (2016): 160-7 doi:10.1097/MBP.0000000000000178

Bsoul, SA, et al. Vitamin C in health and disease. *J Contemp Dent Pract*. 2004 May 15;5(2):1-13. PMID: 15150630

Kim, Yejin et al. "Vitamin C Is an Essential Factor on the Anti-viral Immune Responses through the Production of Interferon- α/β at the Initial Stage of Influenza A Virus (H3N2) Infection." *Immune network* vol. 13,2 (2013): 70-4. doi:10.4110/in.2013.13.2.70

Prasad, Ananda S. "Zinc in human health: effect of zinc on immune cells." *Molecular medicine (Cambridge, Mass.)* vol. 14,5-6 (2008): 353-7. doi:10.2119/2008-00033.Prasad

Ghezzi, Pietro. "Role of glutathione in immunity and inflammation in the lung." *International journal of general medicine* vol. 4 105-13. 25 Jan. 2011, doi:10.2147/IJGM.S15618



Detox

Detoxification is important for the elimination of both environmental and endogenous toxins from the body. The main organs involved are the liver, kidneys, gut and skin.

Sub-optimal detoxification can contribute to chronic inflammation and suppress both our innate and adaptive immune systems. For example, exposure to asbestos, benzene, and halogenated aromatic hydrocarbons such as polybrominated biphenyls (PBBs), polychlorinated biphenyls (PCBs), and dioxins (TCDD) can all lead to immunosuppression in humans.

Immunotoxicity is defined as adverse effects on the functioning of the immune system that result from exposure to toxic substances. Altered immune function may lead to the increased incidence or severity of some infectious diseases or cancer, since the immune system's ability to respond adequately to invading agents is suppressed. Toxic agents may also cause autoimmune diseases, in which healthy tissue is attacked by an immune system that fails to differentiate self-antigens from foreign antigens.

Minimising exposure to toxins like heavy metals, pesticides, pollutants and industrial chemicals provides relief on these systems. We can support our detoxification organs and pathways with appropriate nutrients such as magnesium, B vitamins, Vitamin C, glycine, n-acetyl-cysteine, and glutathione. These nutrients can be supplied through our diet and also with supplementation to address gaps or deficiencies.

Mercury from dental amalgams potentially can also produce harmful effects on the nervous, digestive and immune systems and lungs. Your integrative doctor can help you assess the levels of heavy metals, organic and other toxins in your body with blood and other tests, and can advise you on ways to reduce the levels if necessary.

WHO, Mercury and health.

Dean, J., M. Murray, and E. Ward. Toxic Responses of the Immune System. Chapter 9 in Casarett and Doull's Toxicology, edited by C. Klaassen, M. Amdur, and J. Doull. New York: Pergamon Press, 1996.

Holladay, S. D., and M. Luster. Chemically-Induced Alterations in the Developing Immune System: The Wildlife/Human Connection. Environmental Health Perspectives 104 (Supplement 4): 809- 814. 1996.

Krzystyniak, K. Approaches to the Evaluation of Chemical Induced Immunotoxicity. Environmental Health Perspectives 203(9): 17-23. 1995.

Luster, M. I. Immunotoxicology: Clinical Consequences. Toxicology and Industrial Health. 12(3): 533-535. 1996.

Luster, M. I., and G. Rosenthal. Chemical Agents and the Immune Response. Environmental Health Perspectives. 100: 219-236. 1993.

Office of Technology Assessment. Identifying and Controlling Immunotoxic Substances. Washington, D.C.: Government Printing Office, 1991.

Thomas, P. T. Pesticide-Induced Immunotoxicity: Are the Great Lakes at Risk? Environmental Health Perspectives. 103 (Supplement 9): 55-61. 1995.

List of immunotoxins: http://scorecard.goodguide.com/health-effects/chemicals-2.tcl?short_hazard_name=immun&all_p

Infrared Sauna

Traditional saunas and baths have a host of health benefits including alleviating [respiratory symptoms](#), promoting [immunity](#), and even helping to [prevent the common cold](#) in healthy individuals. Infrared saunas take this traditional activity and combine it with innovative technology. It involves the emission of natural thermal wavelengths to heat up the body's core temperature to help initiate healing, circulation, cell rejuvenation and detoxification. By making you sweat, infrared saunas can also help detoxify the body of environmental chemicals and toxins, as well as promoting lymphatic drainage. Full-spectrum infrared sauna chambers may also feature aromatherapy, which is diffused during treatment, with [antiviral](#) essential oil options like tea tree oil.

Laitinen LA, et al. Lungs and ventilation in sauna. Ann Clin Res. 1988;20(4):244-8. PMID: 3218895

Crinnion WJ. Sauna as a valuable clinical tool for cardiovascular, autoimmune, toxicant-induced and other chronic health problems. Altern Med Rev. 2011 Sep;16(3):215-25. PMID: 21951023

Ernst E, et al. Regular sauna bathing and the incidence of common colds. Ann Med. 1990;22(4):225-7. PMID: 2248758 doi: 10.3109/07853890009148930

Schnitzler P, et al. Antiviral activity of Australian tea tree oil and eucalyptus oil against herpes simplex virus in cell culture. Pharmazie. 2001 Apr;56(4):343-7. PMID: 11338678

Colonic Hydrotherapy^[11]

The immune system is located throughout the body but about 80% of our defences are found in the small and large intestine. That is why it is important to keep your colon healthy with the right food and bacterial levels. Research shows that maintaining a positive balance of good bacteria in the colon crowds out the harmful, unfriendly bacteria, making it difficult for them to multiply. A healthy colon is also essential for the proper absorption of vitamins and minerals.

Closed-system colonic hydrotherapy is a safe way of removing deposits from our intestines quickly and effectively. These deposits exist, in part, because some foods we accept as edible are foreign to our digestive system and require help from our immune system to pass through our body. The resulting sludge can take days, weeks or months to be fully removed through natural processes. By washing away some of the harmful bacteria, a strong environment is created for the beneficial bacteria to grow and recolonise.

[11] Colon irrigation causes lymphocyte movement from gut-associated lymphatic tissues to peripheral blood. Uchiyama-Tanaka Y. Biomed Res. 2009 Oct;30(5):311-4.

Ozone Therapy

Ozone therapy uses colourless gas made up of three oxygen atoms to induce an immune response, cleaning the blood naturally of all pathogenic microbes like viruses, bacteria and parasites^[12]. It is a potent disinfectant which can be given intravenously, rectally, or nasally. Not only can it boost the effectiveness of other treatments, ozone therapy can be part of a natural rejuvenation and regeneration protocol to support healthy ageing.

[12] Emerson MA, Sproul OJ, Buck CE. Ozone inactivation of cell-associated viruses. Appl Environ Microbiol. 1982;43(3): 603-608.

Viebahn R. The Biochemical Processes Underlying Ozone Therapy. Ozone: Science & Engineering. 1985;7:4, 275-285.

Peptide Therapy

Peptides are short-chain proteins that act as signalling molecules, binding to receptors on the cell surface, and directing cell activity. In doing so, peptides are involved in a wide range of functions such as energy production, tissue repair and cellular regeneration. Peptide Therapy provides the body with a supply of essential peptides and amino acids that help prevent infection and fight foreign microbes. The natural peptide Thymosin, utilised in this therapy, is FDA approved in 30 different countries and can support against viral infections. Thymosin was used in the battle with SARS, to prevent its spread^[13].

[13] Gao ZC, Zhu JH, Sun Y, et al. Clinical investigation of outbreak of nosocomial severe acute respiratory syndrome. Zhongguo Wei Zhong Bing Ji Jiu Yi Xue. 2003;15:332-335



Hyperthermia^[14]

Hyperthermia is a non-invasive treatment that involves heating up the body's tissues to induce a mild fever-like state. The body naturally uses fever to stimulate and activate the immune system to fight invading pathogens like bacteria and viruses. By inducing a similar response in the body, hyperthermia has been observed to improve blood circulation, oxygenation of tissues, stimulate the immune system and promote cellular repair and regeneration. As such, it has been used in the USA and Europe for a range of conditions including muscle pains, fibromyalgia, Lyme disease, cancer and chronic inflammation.

[14] Baronio GF, Seta RD, D'Amico M, et al. Effects of Local and Whole Body Hyperthermia on Immunity. In: Madame Curie Bioscience Database [Internet]. Austin (TX): Landes Bioscience; 2000-2013. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK6083/>

RIFE^[15]

RIFE therapy was developed by Dr. Royal Rife in the 1930s when he was working on the high-resolution optical microscope to look at bacterial and viral cells. Whilst experimenting with exposing microbes to high radio frequency waves, he noticed that at a specific frequency some microbes deactivated and died. RIFE harnesses frequency therapy to send harmonious or disharmonious frequencies to our cells to strengthen or weaken them depending on the desired outcome. For immunity, RIFE can be used to support immune cell function or, if already infected, to help the body target and destroy pathogens.

[15] Zimmerman JW, Jiminez H et al Targeted treatment of cancer with radiofrequency electromagnetic fields amplitude-modulated at tumor specific frequencies. Chin J Cancer 2013 Nov; 32(11) 573-581.
Barbault A, Costa FP, Bottger B, et al. Amplitude-modulated electromagnetic fields for the treatment of cancer: discovery of tumor-specific frequencies and assessment of a novel therapeutic approach. J Exp Clin Cancer Res. 2009;28:51

Acupuncture^[16]

From the Traditional Chinese Medicine (TCM) perspective, acupuncture stimulates Wei, our defensive Qi, to protect against external pathogenic factors. Needling of the lung meridian can also relieve upper respiratory symptoms. A significantly positive effect of acupuncture in prevention of common cold has been demonstrated in a study^[17]. It has also been shown that acupuncture may help to modulate immunity cells, like CD4 and CD8, which fight viral infection^[18].

[16] Jong MS, et al. Acupunct Electrother Res. 2006. PMID: 17063830 Clinical Trial.

[17] Preventive and Curative Effects of Acupuncture on the Common Cold: A Multicentre Randomized Controlled Trial in Japan
Kenji Kawakita et al. Complement Ther Med. Dec 2004.

[18] Effects of Electro-Acupuncture on Serum Cytokine Level and Peripheral Blood Lymphocyte Subpopulation at Immune-Related and Non-Immune-Related Points



WHAT ELSE WE CAN DO TO OPTIMISE OUR HEALTH

Although being healthy is currently on everyone's mind, stress, social distancing, and other restrictions challenge our health and wellness daily.

Diet and nutritional supplementation are key pillars of good health, but we believe only an integrated approach that also includes exercise, mental health and sleep can truly improve your health and help you avoid serious outcomes from COVID-19 or other infections.



EXERCISE

Recommendations From LifeHub Health Coaches

Whilst going to your favourite workout class or gym may not currently be possible, that doesn't mean you should forgo your exercise routine. This is the perfect time to try something new, have fun, laugh at how uncoordinated you are and use this time to learn the basics. It's important to maintain or develop a regular exercise routine to strengthen your immune system and reduce our stress levels, as prolonged stress has also been shown to cause inflammation, which is linked to many chronic diseases.

Studies have shown that moderate intensity exercise, 3 times a week reduces the levels of our stress hormone, cortisol, and boosts our immune system by increasing the circulation of our white blood cells, which together help our bodies fight off infections. Just don't overdo it as **high-intensity exercise** can have the opposite effect and decrease our immune response.

Nieman, DC, et al. The compelling link between physical activity and the body's defense system. Journal of Sport and Health Science. Volume 8, Issue 3, May 2019, Pages 201-217. doi: 10.1016/j.jshs.2018.09.009
Nieman, DC. Marathon training and immune function. Sports Med. 2007;37(4-5):412-5. doi: 10.2165/00007256-200737040-00036

Home Exercise Ideas and Video Resources



Pilates

Duration: videos from 10 - 40 minutes

What you need: yoga mat, towel, light hand weights (use filled water bottles if you don't have weights)

Benefits: coordination, balance, focus, reduce stress

Resources: [Blogilates](#), [The Sculpt Society](#), [Classpass](#), [Emi Wong \(Youtube\)](#), [Breathe Pilates](#)

Yoga

Duration: videos from 5-30 minutes

What you need: yoga mat, towel

Benefits: calming, grounding, anti-anxiety

Resources: [Pure Yoga](#), [Classpass](#), [Alo Moves](#)

Dance/Zumba

Duration: videos from 5-30 minutes

What you need: yoga mat, towel

Benefits: coordination, mental focus, etc. (Or for when you feel low mood, sleepy etc)

Resources: [Steezy Studio](#), [The Sculpt Society](#)

High-Intensity Interval Training

Duration: videos from 5-30 minutes

What you need: yoga mat, towel

Benefits: raise heart rate, sweat out toxins, energy boost

Resources: [Classpass](#), [FitnessBlender \(Youtube\)](#), [Emi Wong \(Youtube\)](#)

Boxing/MMA

Duration: videos from 15 - 40 minutes

What you need: spatial dimensions, towel

Benefits: raise heart rate, sweat out toxins, release stress, energy boost

Resources: [FitnessBlender \(Youtube\)](#), [PopSugarFitness \(Youtube\)](#), [Hybrid MMA](#)



MENTAL HEALTH

Social Distancing ≠ Social Isolation

Many of us will be practicing 'Social Distancing' but this does not mean that we should feel lonely, isolated, sad or unmotivated. Not only is mental health a key index of health, social isolation and loneliness have both been linked to a weakened immunity.

All around the world, people are getting creative with digital socialisation. Use apps like Zoom, FaceTime, WhatsApp video call, HouseParty and more to set up virtual activities with colleagues, friends and family. This new virtual way of living could include:



Team
Meetings



Cooking
Challenges



Group
Workouts



Digital
Date Night



Movie
Night



Book
Club



Music
Jamming
Sessions

Pressman, SD., et al. Loneliness, social network size, and immune response to influenza vaccination in college freshmen. Health Psychol. 2005 May;24(3):297-306. doi: 10.1037/0278-6133.24.3.297

Managing Stress

Studies show that chronic stress (anything lasting more than a few hours) weakens our [immune system](#) and induces [inflammation](#). It's important to check in with your emotions and thoughts, knowing when you're stressed or anxious, and finding activities that help you relieve those emotions. Therefore, whether it be connecting with your friends and family through a call, not checking the news just before going to bed, or practicing gratitude on a daily basis, find what works for you.

Tips for Managing Stress from a LifeHub Psychologist

Digital Detox:

From working from home to FaceTiming loved ones and checking the news, most of us are spending even more time in front of our electronic screens. Schedule digital-free times throughout the day to disconnect and give your mind a break (and put your phone somewhere you can't see or hear it).

Stay informed, but not over-informed:

Keep up to date with key messages from reliable sources. However, be careful not to be checking updates excessively as this will create continuous anxiety.

Take advantage of extra time:

Make the most of your free time - master the art of cooking, download a language app, read a book, get creative! Replace 15-30 minutes each day of digital scrolling with learning something new.

Check-in with yourself daily & schedule "worry time":

Suppressing your anxieties are only going to make things worse, however we also don't want to spiral into negative thought patterns. Set aside 5-minutes (set a timer!) to write out what is worrying you and if there is anything you can do about it. When time is up, take a deep breath and continue with your day.

Mindfulness:

Ground yourself by practicing mindfulness, being in the present moment prevents your thoughts from wandering to the past or future thus giving our brain a rest from constant worries.

Self-care:

Engage in activities that bring intrinsic enjoyment - reading, colouring, skin-care routines, funny videos or whatever makes you feel joyful.

Practice Gratitude:

Find 1-3 things you are grateful for. Writing it down in a journal or a post-it note before bed can help relieve some stress and anxiety.

Dhabhar, FS. Effects of stress on immune function: the good, the bad, and the beautiful. *Immunol Res.* 2014 May;58(2-3):193-210. doi: 10.1007/s12026-014-8517-0.



SLEEP

Integrative Doctors Explain The Importance Of Sleep

Many of us notice that we're more likely to get sick if we're not sleeping well. Just like our sleep-wake cycle (known as our circadian rhythm) our immune system also displays a daily pattern. These two rhythms are synchronized with one another.

During the waking period, certain immune cells like cytotoxic NK cells and T lymphocytes are at their peak activity. This is because when we are awake we will be exposed to the most pathogens and so we need these cells to fight off invaders as we go about our lives.

In contrast, the anti-inflammatory effects of cortisol and catecholamines (our stress hormones) are at their lowest during early sleep. This allows for the initiation of the Th1 immune response that supports long lasting immunological memories in the lymph nodes. As we sleep, our immune system continues by producing antibodies to fight off pathogens and culling damaged cells. As such, much of our immune system preparation and clean-up work is completed during the night while we rest.

Upon awakening, cortisol and catecholamines rise again to shut down the pro-inflammatory response evoked during sleep. Prolonged stress and sleep deprivation will therefore trigger the release of pro-inflammatory cytokines leading to chronic low-grade inflammation and immunodeficiency, increasing the body's susceptibility to many infections. **In a nutshell, we recommend getting a minimum of 8 hours of sleep every night^[19].**

[19] Besedovsky L, Lange T, Born J. Sleep and immune function. *Pflugers Arch*. 2012 Jan;463(1):121-37. doi: 10.1007/s00424-011-1044-0. Epub 2011 Nov 10. PMID: 22071480; PMCID: PMC3256323.



Sleep Recommendations From LifeHub Health Coaches

Be consistent: Set your smartphone to give you a consistent bedtime reminder, as well as silencing notifications.

Avoid sleeping pills: They can harm you long-term and there are more natural alternatives out there. Our favourites are magnesium for relaxation and micro-dosing melatonin to encourage a healthy circadian rhythm.

Limit your coffee intake: Caffeine takes 8 hours to get out of your system so try to limit the number you have each day, and cut out altogether after 3pm.

Reduce alcohol: Even though it makes you drowsy and helps you to get to sleep, your sleep will be less restful and therefore not as beneficial.

Eat lighter at night, and don't eat less than 2 hours before bed: Aside from the discomfort (and possible acid reflux) when you're full and lie down, your body is designed to digest in an upright position.

Sleep Hygiene Tips

- Wind down by doing the same sequence of activities before you go to bed. This signals to your body that it's time to sleep. You could try this: Drink a cup of tea —> shower —> brush teeth —> stretch —> read in bed.
- Breathing exercises. Try consciously counting your breaths, or use one of [these techniques](#).
- Stretch it out before bed. [Try out this 7 minute yoga routine](#).
- Set up your environment. Lower the lights in your apartment 2 hours before bedtime, and use a scent to relax you.
- Remove your phone from your bedroom, or at least put it on airplane mode. This removes the temptation to check your phone in the middle of the night, as well as cutting down on light that stimulates your brain.
- Reading a book will draw your focus to one activity, distracting you from your to do list.

Competitive?

You can use a free app like [Sleep Cycle](#) to monitor and compare your sleep time, quality and snoring!

Healthline. The 9 Best Breathing Techniques For Sleep.

<https://www.healthline.com/health/breathing-exercises-for-sleep>

Yoga with Adriene. 7 Minute Bedtime Yoga with Adriene. <https://www.youtube.com/watch?v=L19upn4t9n8>



HEALTH MEASURES TO KEEP KIDS HEALTHY

Advice from Integrative Doctors

What Do We Know About COVID-19 And Children?

COVID-19 can infect people of all ages, including children, although it appears to be less serious in children. Only a small proportion of cases ([2.5%](#)) of those under 19 years old have presented with severe symptoms, with [infants \(<1yr\) most at risk](#). However as kids are still developing their immune system they are still a vulnerable age group that deserve special consideration.

Main Clinical Symptoms Of COVID-19 In Children

The main clinical features of COVID-19 in children are fever, dry cough, and pneumonia, however vomiting and diarrhea have also been [reported in children](#). Estimates show that about a third of children are asymptomatic, meaning they do not show any symptoms.

Supplements For Kids^[1]

- Vitamin C 500 mg daily
- Vitamin D 400 IU to 1000 IU daily
- Zinc liquid 10 mg daily
- Probiotics for kids
- Omega 3 liquid supplements for children
- Colostrum powder to boost the gut immunity (unless lactose intolerant)
- Echinacea or elderberry herbal remedy to help treat flu like symptoms

[1] Recommended for children aged 2-16

WHO. Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19). www.who.int/docs/default-source/coronavirus/who-china-joint-mission-on-covid-19-final-report.pdf
Dong Y, Mo X, Hu Y, et al. Epidemiological characteristics of 2143 pediatric patients with 2019 coronavirus disease in China. Pediatrics. 2020; doi: 10.1542/peds.2020-0702
Qiu, H., et al. Clinical and epidemiological features of 36 children with coronavirus disease 2019 (COVID-19) in Zhejiang, China: an observational cohort study. The Lancet Infectious Diseases. doi:[https://doi.org/10.1016/S1473-3099\(20\)30198-5](https://doi.org/10.1016/S1473-3099(20)30198-5)



ABOUT US

We are here for you

With a team of over 30 healthcare professionals, LifeHub operates the largest integrative medical wellness facility in Hong Kong, which combines the science of functional medicine with scientific complementary therapies. We are the first wellcare company - where our primary goal is to help prevent you from getting seriously sick in the first place, to help you live longer, look better, and to improve your ability to work and play.

While we or LifeClinic can provide many of the standard medical clinic services, we go a level deeper by assessing your health risks, looking for the root causes of chronic illnesses and creating customised nutritional and other treatment plans to achieve optimal health and avoid serious diseases. We bring you the latest innovations in healthcare with products and therapies based on scientific research and selected by experienced doctors.

Our mission is to empower you to achieve optimal vitality and longevity through our personalised and data-driven approach. Our doctors, practitioners, health coaches and other wellness experts are available to meet you online or at our flagship centre in Central.

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