

Natural Immune boosters as first-line armours to combat viral infection-COVID19: Myth or Science?

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Abstract

The coronavirus COVID-19 epidemic has wreaked havoc on inhabitants of earth killing thousands of humans from more than 150 countries. The epidemic has put a number of countries under complete lockdown and the deadly situation is still prevailing around the globe. Vaccines have been long known as the most effective means of preventing viral infections. However, the lack of vaccines against COVID-19 has further worsened the situation. In this time of health crisis, it is the duty of scientific research community to provide alternative, effective and affordable strategies to vaccinate human bodies against viral infections-COVID-19 based on focused experimental approaches. Growing evidence suggests that certain natural foods and lifestyle changes have potential to optimize immune functions against viral infections including improving defense function, resistance towards invading pathogens, while maintaining self-tolerance. Boosting immune system gives an edge in fending off viruses and staying healthy. This review presents the six smart steps to add to your to-do list which let the inner work of immunity take place against viral infections-COVID-19 by dissolving the powers of disease and illness. Many of these factors are associated in their functions to improve or properly maintain the immune function such as promoting anti-inflammatory functions, inhibiting pro-inflammatory mediators, modulating cell-mediated immunity, altering the antigen-presenting cellular functions as well as promoting communication between the innate and adaptive immune responses. Thus, a scientific illustration of boosting the immune system by proper sleep, moderate exercise, avoiding stress, utilizing vitamins enriched foods, intake of more water and use of fruits and vegetables will hopefully help the community to deal with the coronavirus by vaccinating the human systems naturally.

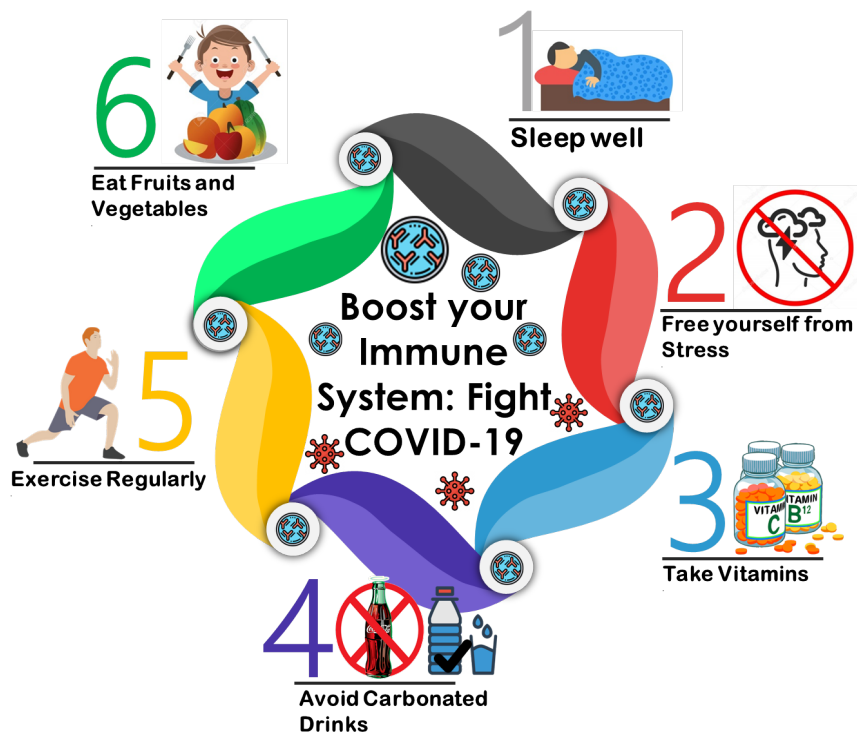


Figure 1. Six smart steps to reboot immune system and strengthen inner forces to fight viral infections-COVID-19

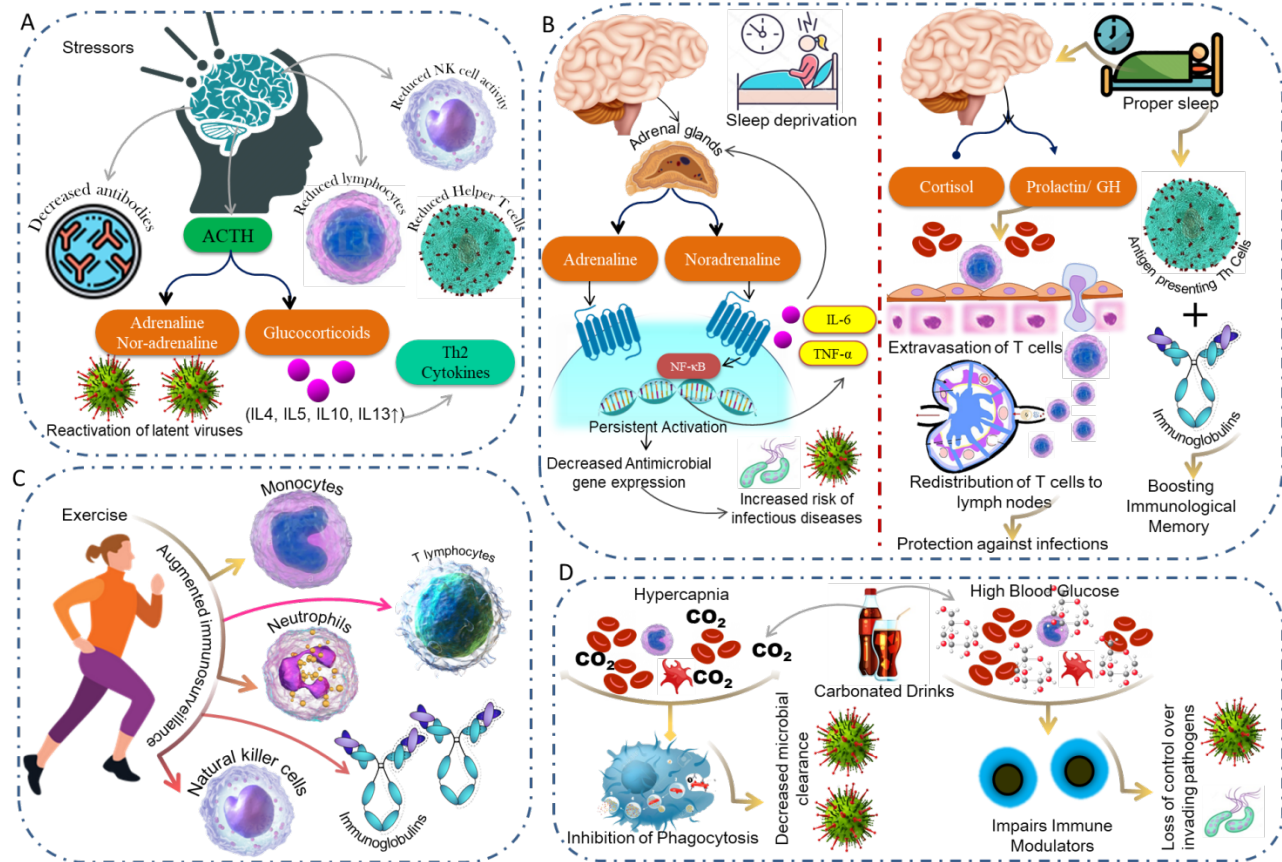


Figure 2. A scientific illustration of how stress, sleep deprivation and carbonated drinks could potentially suppress the immune system while proper sleep and exercise boost the immune system. (A) Stress-mediated release of adrenocorticotrophic hormone makes us vulnerable to microbial infections by suppressing immune system mediators and reactivation of latent viruses. (B) Sleep deprivation leads to persistent activation of NF- κ B which poses potential threat towards fighting infections via reduction of anti-microbial gene expression while proper sleep ensures the redistribution of T cells to lymph nodes and enhances immunological memory. (C) The healing energy of exercise leads the stimulation of immune system to beat ill health substances. (D) Carbonated drinks deactivate immune system as high glucose and CO₂ levels impair macrophage activity and fighting powers of immune system.

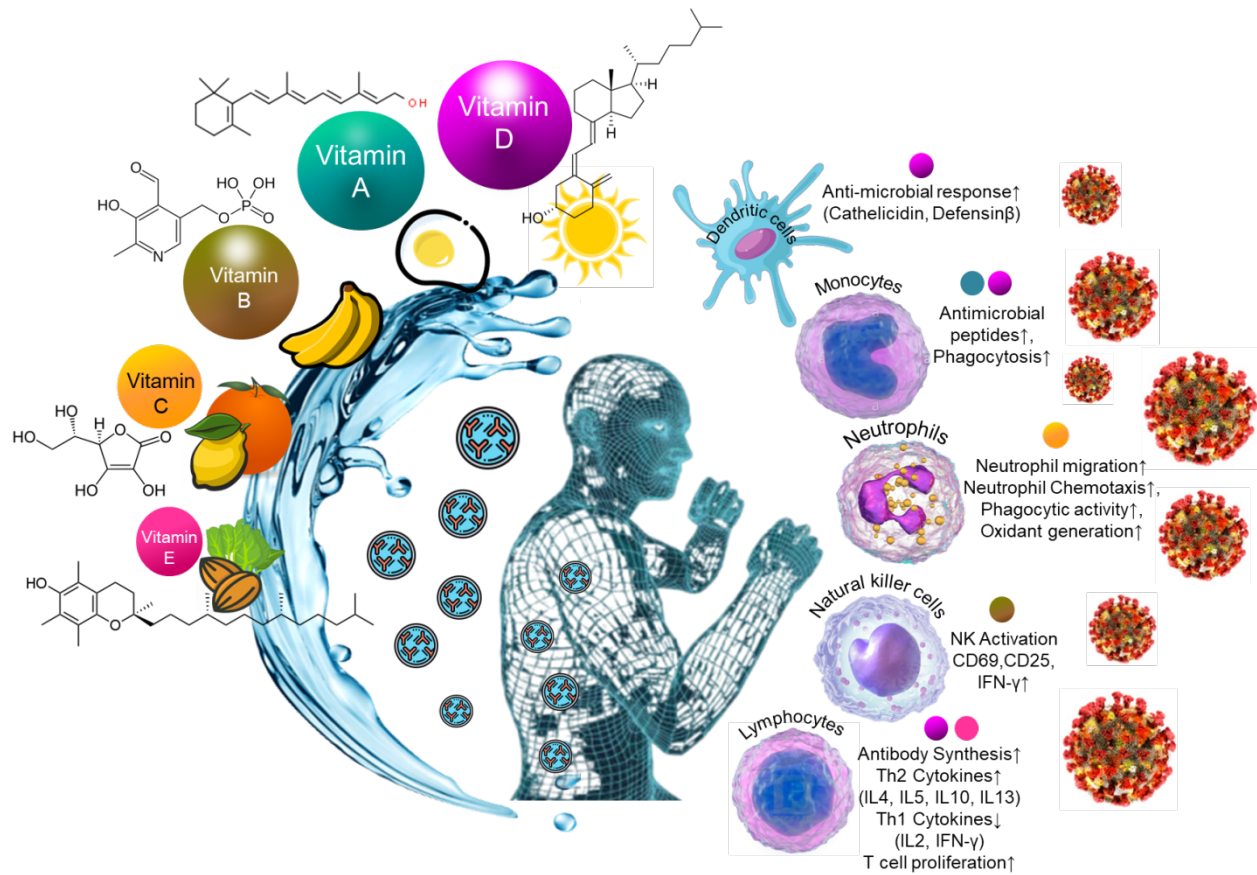


Figure 3. Vitamins support human health by washing out the forces of illness via recruitment of immune soldiers. Dietary intakes of vitamins-enriched food exert immunomodulatory effects on several immune-cell types including monocytes, dendritic cells, lymphocytes and natural killer cells which augment immunity against microbes.

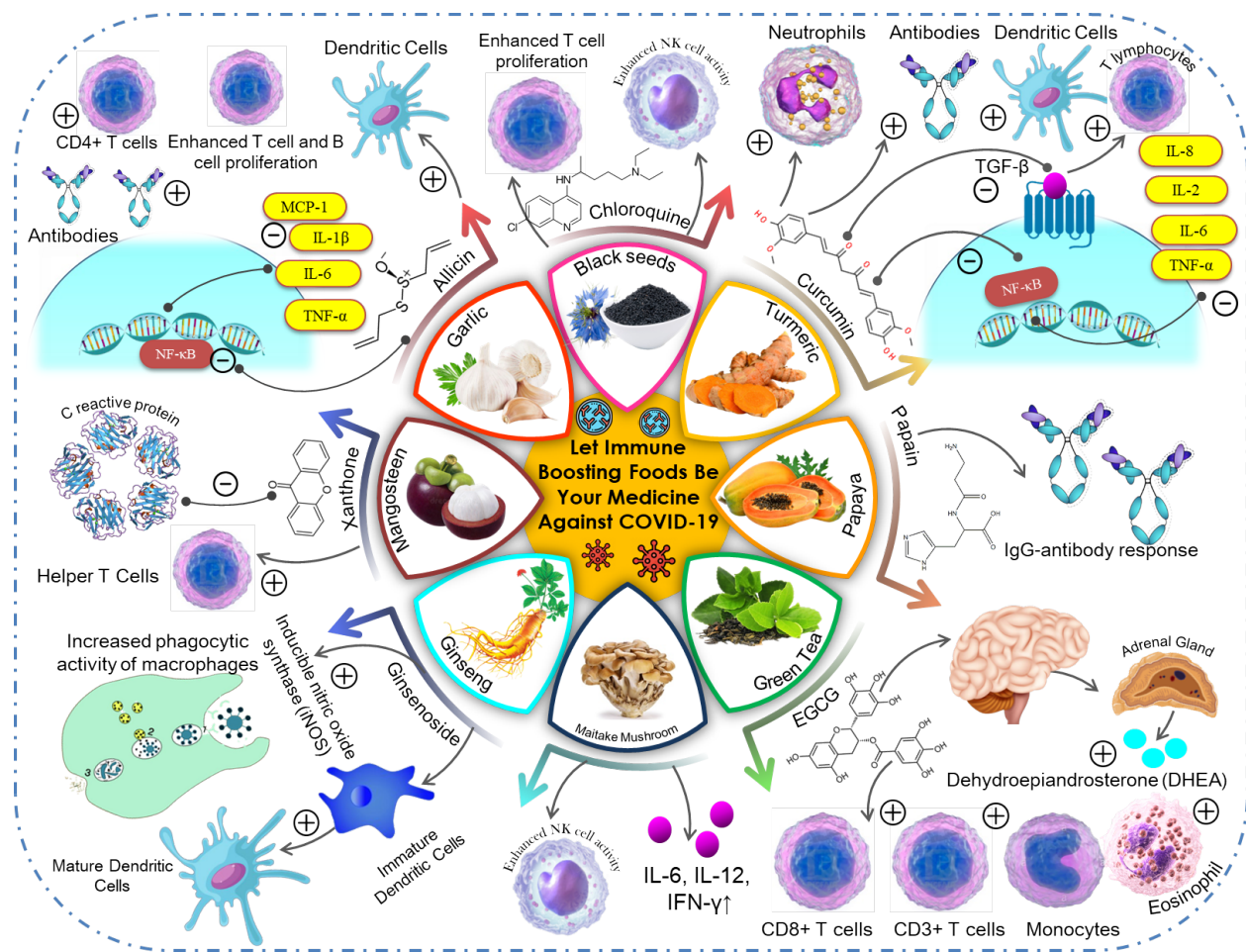


Figure 4. An illustration of dietary nutrients as important mediators of immunity. Fruits, vegetables and spices are enriched with immunostimulatory agents that strengthen innate and adaptive immune response against invading pathogens.