

# VITAMIN B AND COVID

- For optimal body functioning and boosting of the immune system, proper nutrition is needed.
- A lot of attention has been put on Vitamin C and Vitamin D. It has been seen that vitamin C supplementation can increase the oxygenation index in people with COVID-19. Low levels of vitamin D have been associated with a higher rate of mortality.
- Some studies have been looking at vitamin B's relationship with COVID-19.
- Vitamin B plays a role in cell functioning, energy metabolism, and proper immune function.
- It has also been seen to reduce inflammation, improve respiratory function, and reduce the length of stay in the hospital when infected with COVID-19.
- When deficient in vitamin B, there has been seen significant impairment in cell and immune system function which leads to inflammation.

The following talks about each specific Vitamin B and discusses how it relates to COVID-19

## VITAMIN B1 (THIAMINE)

- Vitamin B1 improves the function of the immune system.
- It has been seen to reduce the risk of type 2 diabetes, cardiovascular disease, kidney disease, aging-related disorders, cancer, mental disorders, and neurodegenerative disorders.
- Vitamin B1 deficiency leads to inadequate antibody responses, which are the immune systems defense against infections/diseases. Antibodies are needed to get rid of COVID-19 virus. Being deficient in Vitamin B1 can lead to inadequate defense against the virus leading to more severe symptoms.
- Some research has shown that during the early stages of COVID-19 vitamin B1 could potentially limit hypoxia (low O2 levels) and decrease the length of stay in the hospital.

## VITAMIN B2 (RIBOFLAVIN)

- Vitamin B2 and UV light can potentially decrease the risk of transfusion transmission of COVID-19.

## VITAMIN B3 (NICOTINAMIDE, NIACIN)

- Vitamin B3 is an important part of NAD (nicotinamide adenine dinucleotide, which functions as an electron acceptor) and both are important during inflammation.
- Vitamin B3 has been seen to protect the lungs and strengthen the immune system.
- Studies have said it could possibly be used as an adjunct treatment for COVID-19 because of the anti-inflammatory function.

## VITAMIN B6 (PYRIDOXAL 5'- PHOSPHATE, PYRIDOXINE)

- Vitamin B6 is an important factor in inflammatory pathways. When deficient in Vitamin B6, immune dysregulation has been seen.
- Vitamin B6 is used and depleted during inflammation. With that being said, it suggests that people with COVID-19 could be deficient in vitamin B6.
- People with greater risks (type 2 diabetes, cardiovascular disease and elderly) of poor outcomes from COVID-19 have been seen with low levels of vitamin B6.
- A study has suggested that COVID-19 symptoms can possibly be less severe when supplementing with vitamin B6 because it helps regulate immune system responses and decreases inflammation.



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## VITAMIN B9 (FOLIC ACID, FOLATE)

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## VITAMIN B12 (COBALAMIN)

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- Vitamin B9 is important for DNA and protein synthesis and the adaptive immune response.
- An enzyme called furin, is associated with bacterial and viral infections. Furin is a good target to help prevent/fight infection.
- Vitamin B9 has been seen to inhibit furin, which can possibly prevent the binding of COVID-19 virus, leading to a decrease in the virus entering cells and virus turnover.
  
- Vitamin B12 is important for the synthesis of red blood cells, nervous system health, cell growth and DNA synthesis.
- A study saw that vitamin B12 supplementation could possibly reduce COVID-19 related symptoms.

# Conclusions

- Overall, Vitamin B helps keep the immune system health and can potentially prevent or reduce the symptoms of COVID-19.
- It is important to have good nutrition to keep your immune system strong because poor nutrition can lead to getting infections more easily.
- The recommended vitamin amounts are important to keep the body functioning optimally and keeping the immune system strong.
- Vitamin B has been seen to help with immune response by reducing inflammation, reducing breathing difficulty, gastrointestinal problems, and possibly improving COVID-19 outcomes and reducing the length of stay in the hospital when infected with COVID-19.

**CONTACT US FOR MORE INFORMATION ON NUTRITIONAL SUPPLEMENTS  
AT: [GNG@FAIRWAYVENTURESGROUP.COM](mailto:GNG@FAIRWAYVENTURESGROUP.COM)**

## Reference

1. Shakoor, H., Feehan, J., Mikkelsen, K., Al Dhaheri, A. S., Ali, H. I., Platat, C., . . . Apostolopoulos, V. (2020, August 14). A potential role for vitamin B in COVID-19. Retrieved February 18, 2021, from <https://doi.org/10.1016/j.maturitas.2020.08.007>

