

Low Magnesium as a Risk Factor in COVID-19

by Margy Squires

Don't be low in magnesium where COVID is concerned. Researchers specifically looked at how low magnesium impacts COVID pathophysiology (changes in normal function of the body related to COVID onset, development and outcome.) What they found was that **not having adequate magnesium puts a person at risk** for getting COVID, having more severe symptoms, on recovery, survival, and risk of long COVID.



Magnesium is already known to be low in cardiovascular disease, diabetes, hypertension, metabolic syndrome and obesity. These conditions also were linked to disease severity and survival in COVID. Could magnesium status be an independent influence on COVID too? Researchers say yes. A May 2023 review of dozens of published papers concluded "Magnesium is necessary and essential to support full recovery in COVID-19".

Magnesium's role in health is complex and still evolving. Once thought to help the body regulate 325 biochemical reactions, that number increased to 600 or more just in the past year. Researchers took what is known about COVID infection and disease progression and matched it to magnesium's many roles in the body. Major COVID complications are thrombotic events in the heart and lungs, hyper-immune system activation creating a cytokine storm, acute inflammation and impaired respiratory function.

The virus has a system wide effect on various cells, tissues and organ and symptoms vary on an individual basis. For example, infected nerve cells can cause neuro-inflammation that disrupts the normal function of the brain, muscles, and sensory taste and smell.

Magnesium has several mechanisms which quiet COVID. *First*, if enough magnesium is in the cell, it has the ability to protect the cell from initial invasion by inhibiting the spike protein. *Second*, magnesium's role as a signaling agent activates immune cell response and down regulates inflammatory agents (cytokines) to quench the cytokine storm. *Third*, it also relaxes bronchial spasms by relaxing smooth muscles in the lungs and lowers the risk of blood clots by dilating blood vessels. Magnesium also modulates gut microbiota in the GI tract and lungs to further enhance immune function. While COVID has multi-system actions, magnesium – *if you have optimal levels* – appears to be a formidable match for COVID symptom by symptom and system to system.

There's more. Magnesium has a direct role in the activation and metabolism of vitamin D, a known immunity agent. Even if you have adequate D levels (50 ng/mL), vitamin D cannot perform its defensive actions without

adequate magnesium. However, research shows the body triages nutrients for survival. In a study of COVID patients with osteoporosis, magnesium is used for bone building first, then activation of vitamin D and, if any remains, for immunity needs. Thus, anyone with a chronic condition and low magnesium is at risk with COVID. It is critical to have enough of this essential mineral via diet or supplement as your body does not make it. You need magnesium *every day for multiple body functions*.

About 30% of those infected develop Long COVID. It can occur weeks to months after the initial infection with prolonged symptoms of brain fog, neuro-muscular weakness, fatigue. GI distress and other symptoms caused by the inflammatory damage and immune abnormalities COVID causes. Some people also have a post-COVID vaccine reaction that mimics many of the symptoms of an acute infection with uncertain resolution.

Protect yourself. Find out your magnesium level with an RBC magnesium blood test and check your D3 blood level too. The multi-system challenges of COVID depend on you being as healthy as you can be so you do not get COVID in the first place and recover well even if you do.

There are other helpful nutrients in COVID Universal vitamin C, Quercetin for respiratory support, CoQ10 and Alpha Lipoic Acid as antioxidants. Both COVID and low magnesium status affect the GI tract. Since magnesium is absorbed via the small intestines, add probiotics to your immune arsenal to protect immunity and magnesium.

Remember magnesium is only helpful if absorbed. TyH's Fibro-Care™ is highly absorbable magnesium to help you reach and maintain an optimal level, not just for COVID but for the multiple ways magnesium supports your health. The research is clear: don't be low in magnesium!

Resources: 1) Aziz, A et al. *Magnesium Homeostasis Role in COVID-19 Infection* 08/23. 2) Chambers P. *Long Covid, Short Magnesium* 05/22. 3) Trapani V. *The relevance of magnesium homeostasis in COVID-19*, 10/21.

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