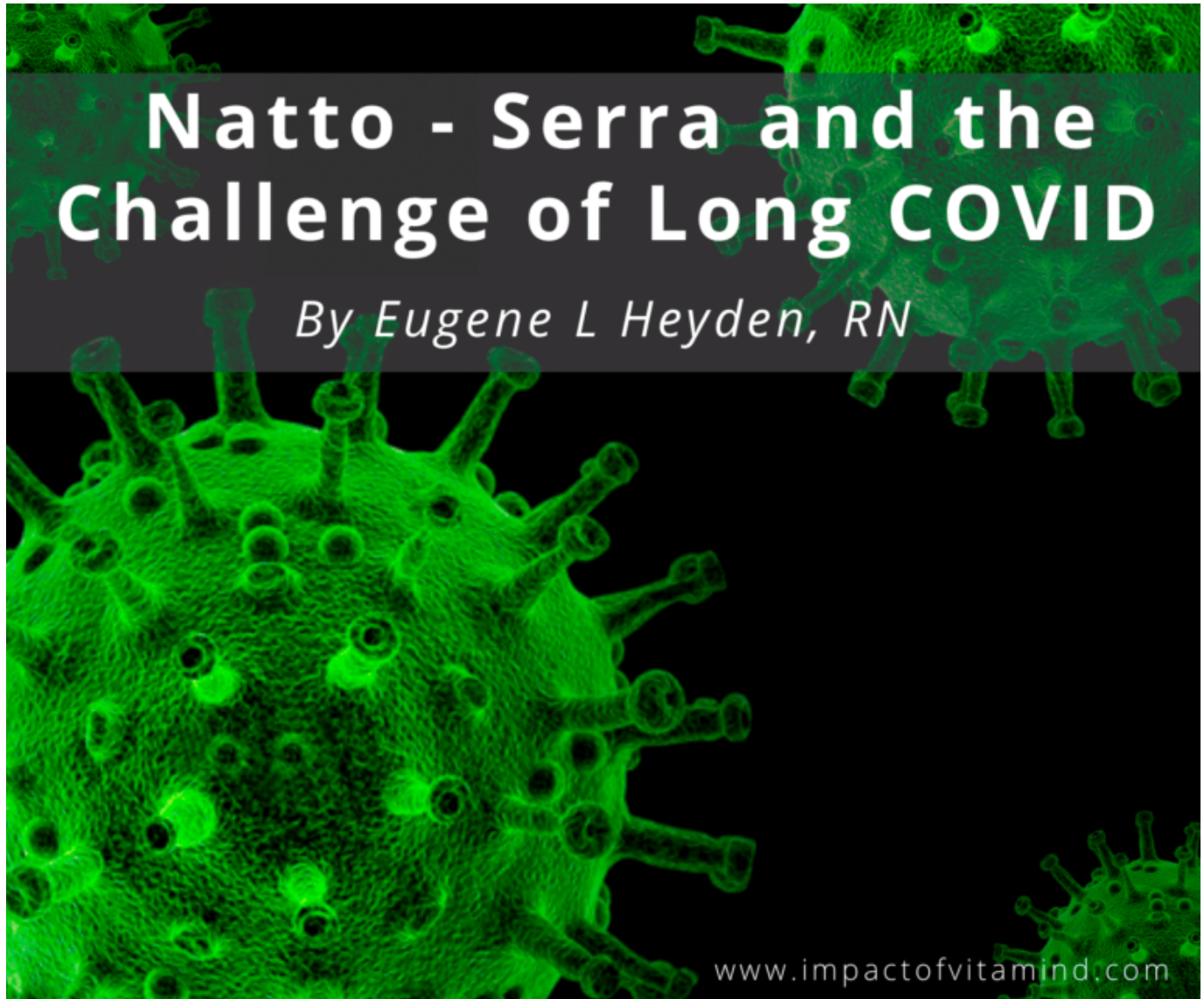


Natto-Serra and the Challenge of Long COVID

written by Eugene L. Heyden, RN. | September 22, 2022



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By Eugene L. Heyden, RN

Introduction

The symptoms of long COVID are multifarious and include breathlessness, fatigue,

chest pain, myalgia, cognitive dysfunction, innate immune responses coupled to inflammatory cytokine production, and a pro-coagulant state. ~Kell et al., 2022, emphasis added)

*Ongoing vascular endothelial damage promotes platelet adhesion and coagulation, resulting in the impairment of various organ functions. Meanwhile, thrombosis will further aggravate vasculitis contributing to further deterioration. Thus, **long COVID is essentially a thrombotic sequela.** ~Wang et al., 2022, emphasis added*

Simply put, and in view of the above, the challenge of Long COVID is the challenge of dealing with all the clotting that is occurring, silently, underappreciated—negatively impacting a life, perhaps your life.

And what is driving it all? All the clotting? All the harm? I believe we have found the answer. In long COVID there is a persistence of spike protein, the protruding portion of the virus that serves to attach to and infect the target cell. They are just not going away! And there must be a ton of them hanging around, post-infection, just waiting to stir up trouble.

*When comparing patients with post-COVID symptoms and patients without, **we found that Spike protein and viral RNA were more likely to be present in patients with PASC [Long COVID] and in some cases at higher levels compared to acute COVID-19 patients.** We also observed that the percent positivity of circulating viral RNA increased in the PASC positive individuals compared to acute COVID-19 group while Spike protein positivity remained the same. (Craddock et al., 2022, emphasis added)*

Oh, but there is more!

*We report that both viral RNA and/or Spike protein remain in circulation long after acute infection (**more than one-year** post-infection in some cases) and this **persistent circulation of viral components** is associated with PASC [AKA Long COVID]. (Craddock et al., 2022, emphasis added)*

We will assume it is you who is the victim here. During your COVID infection, you were exposed to a lot of viruses and a lot of spike protein. Not particularly pleasant,

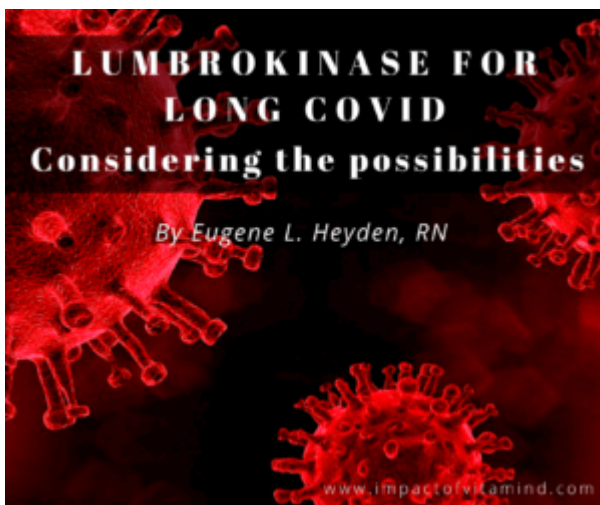
but thankfully you survived. And now you have lingering symptoms, likely most distressing, and are left wondering what is going on. It looks you are in it for the long haul.

Or perhaps your brush with death was barely noticeable, as some cases of Long COVID arise out of the mildest of cases (Crook et al., 2021). Whatever the case may be, in Long COVID there is continued exposure to spike protein, all hidden from view. And although the virus has been vanquished, parts of it remain, namely the spike protein (Craddock et al., 2022; Patterson et al., 2022; Kell et al., 2022). Spike protein exposure, as we are now learning, stimulates clot formation which, in turn, creates blockages within the microcirculation (i.e., capillaries) (Kell and Pretorius, 2022). And because of this, you get to remain ill—experiencing an array of symptoms that can easily be attributed to impaired oxygenation at the tissue and cell level (Kell et al., 2022). Certainly, there is something that can be done to address all of this. We'll explore the possibilities here. But first, a little review is in order.

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