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## Letter to the Editor

## Letter to the editor: Vitamin D deficiency in critically ill COVID-19 ARDS patients



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Dear Editor,

With great interest, we analyzed the study by Notz et al. (2021) on vitamin D deficiency in critically ill patients with coronavirus disease 2019 (COVID-19). In addition, we investigated the clinical and immunological effects of this vitamin supplementation in patients with severe acute respiratory syndrome coronavirus type 2 (SARS-CoV-2) [1].

Vitamin D plays a fundamental role in the host's immune response against infections and is active throughout the immune system [2]. Several factors, including dietary imbalance, stress and age contribute to immune dysregulation. Whereas, in the elderly population, the increase in COVID-19 mortality was related to immunological disorders and vitamin D deficiency [2]. Given the impact that advancing age can have on these patients, it would be interesting for the authors to divide their sample into two groups: adults and elderly, to analyze the data by age group.

In their results, Notz et al. (2021) reported that four patients were taking vitamin D before infection with COVID-19, demonstrating sufficient levels of 25-hydroxyvitamin D during their ICU stay. Thus, it would be essential to describe the time of use and daily consumption of vitamin D by these individuals, since they had a better rate in the levels of 25-hydroxyvitamin D.

In the methods, Notz et al. (2021) did not specify the classification regarding the degree of severity of COVID-19 in their sample. Studies carried out during the first wave of the SARS-CoV-2 pandemic suggest that the magnitude of the viral load may be associated with clinical outcomes in hospitalized patients [3,4]. In this setting, quantification of SARS-CoV-2 viral load and detection by RT-PCR is useful for patient management [4]. The RT-PCR COVID-19 should be reported with caution after the clinical correlation of each patient, as performed in the study by Tanner et al. (2021), in which the viral load was separated into three groups: high, moderate, and low.

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Although studies show that COVID-19 vaccines do not start providing significant protection until 2 weeks after the first dose, the immune response elicited is gradual; it may provide some degree of protection during this period, as neutralizing antibodies are considered allied to the success of vaccines [3,5]. Furthermore, RNA vaccine-induced antibodies showed a similar level of neutralization with antibodies derived from infected individuals against prevalent variants [3]. Therefore, it is necessary to clarify whether the sample had previous contamination by COVID-19 and/or if they had already been immunized, stating the period in which they were vaccinated.

It is important to highlight that the present study, due to the relevance of the investigation on the role of vitamin D supplementation in patients with SARS-CoV-2, provides an important scientific and clinical contribution for the current moment.

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#### Conflict of interest

The authors have no conflicts of interest to report.

#### Author contributions

MERAS idealized the letter, writing of the manuscript. ABJS, WMAB, MSSF and VONS writing and revision of the manuscript. All authors read and approved the final version of the manuscript.

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María Eduarda Rodrigues Alves Santos\*  
Centro Universitário UNIFACOL, Centro Integrado de Tecnologias em  
Neurociência, Vitória de Santo Antão, PE, Brazil

Waleska Maria Almeida Barros  
Centro Universitário UNIFACOL, Centro Integrado de Tecnologias em  
Neurociência, Centro Universitário Osman Lins R. Pedro Ribeiro, 85 -  
Universitário, Vitória de Santo Antão, PE, 55612-285, Brazil

Programa de Pós Graduação em Neuropsiquiatria e Ciências do  
Comportamento, Universidade Federal de Pernambuco, Av. Prof.  
Moraes Rego, 1235 - Cidade Universitária, Recife, PE, 50670-901,  
Brazil

E-mail address: [waleska\\_barros@hotmail.com](mailto:waleska_barros@hotmail.com).

Matheus Santos Sousa Fernandes, Ana Beatriz Januário Silva  
Programa de Pós Graduação em Neuropsiquiatria e Ciências do  
Comportamento, Universidade Federal de Pernambuco, Av. Prof.

Moraes Rego, 1235 - Cidade Universitária, Recife, PE, 50670-901,  
Brazil

E-mail addresses: [theusfernandes10@hotmail.com](mailto:theusfernandes10@hotmail.com) (M.S.S.  
Fernandes), [anabeatrizpersonal@outlook.com](mailto:anabeatrizpersonal@outlook.com) (A.B.J. Silva).

Viviane Oliveira Nogueira Souza  
Núcleo de Nutrição, Universidade Federal de Pernambuco, Centro  
Acadêmico de Vitória de Santo Antão, Alto do Reservatório, s/n - Alto  
José Leal, Vitória de Santo Antão, PE, 50608-680, Brazil

E-mail address: [viviane.nogueira@ufpe.br](mailto:viviane.nogueira@ufpe.br).

\* Corresponding author. Centro Universitário Escritor Osman Da  
Costa Lins, UNIFACOL, Rua Pedro Ribeiro, 85- Universitário, Vitória  
de Santos Antão, PE, 55612-285, Brazil.

E-mail address: [eduardaarodriguesz@gmail.com](mailto:eduardaarodriguesz@gmail.com) (M.E.R.A. Santos).

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