



ABSTRACT

Vitamin D and immune responses: how much is too much?Nurul Ratna Mutu Manikam¹^{1.} *Department of Nutrition, Faculty of Medicine Universitas Indonesia – Cipto Mangunkusumo Hospital.*

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Vitamin D is a sunshine vitamin that is widely known for bone health. The main source of vitamin D from exposure to ultraviolet B radiation, whereas only 20% from natural and fortified food. Recent studies concluded that vitamin D has a putative role in reducing the risk of viral respiratory infection by suppressing pro-inflammatory cytokines and delaying increasing anti-inflammatory cytokines response. Whereas, vitamin D regulates innate immunity through macrophage and dendrite cell activity as well as an adaptive immune response through lymphocyte T cells response. Some studies showed a negative correlation between the level of vitamin D and the risk of COVID-19 infection. Other studies reported lower mortality of COVID-19 after a high dose of vitamin D for 2-3 months. However, this result was not seen in a high dose of vitamin D after COVID-19 was made. A review study suggested that the level of vitamin D above 50 ng/ml may have a protective role against viral infection. Another review suggested intake of vitamin D 4000-10.000 IU for 6 weeks might increase 2 to 3 folds from baseline serum 25-OH(D) concentration. Some randomized clinical trials of different doses of vitamin D and COVID-19 have not been concluded yet. Future research may be worth to conclude appropriate dose of vitamin D to protect against COVID-19 infection.

Keywords: vitamin D, immunity, covid-19

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