Vitamin D and immunity: reality or phantasy?

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A PubMed search using the terms “vitamin D and immunity” reveals more than 6,000 papers. While a PubMed search using the terms “vitamin D and COVID-19” results in more than 1,000 paper with both showing an increasing trend of publications. What’s these indicates to us? Vitamin D has been attracting a lot of attention from researchers, pharmaceutical industries and public mainly because of its potential extra-skeletal effects in health and in various diseases such as diabetes, cardiovascular diseases, cancer and autoimmune diseases. Historically, vitamin D was associated with diseases such as rickets in children and osteoporosis in adults. However, during the COVID-19 pandemic, vitamin D gained a special focus related to its immune modulating ability. Previously, vitamin D is reported to help in boosting the immune system via several mechanisms.\(^1\)\(^-\)\(^3\) With regards to viral infection such as COVID-19, vitamin D enhances cellular immunity by reducing the cytokine storm by reducing the expression of pro-inflammatory cytokines and increasing the expression of anti-inflammatory cytokines. A detailed mechanistic and therapeutic insights is discussed by Marcinkowska and Brown (2022).

Unfortunately, vitamin D or the sunshine vitamin is surprisingly lacking in people in the Asian region and across all age groups.\(^1\),\(^5\),\(^10\),\(^11\) This is mainly due to limited intake of vitamin D rich food source in this region and due to sun ray avoidance behaviour\(^4\) and monsoon season.\(^8\) Obesity further exacerbates deficiency as the fat-soluble vitamin D is sequestered and stored in adipose tissue instead of blood circulation.\(^12\)

COVID-19 is a wakeup call for everyone to rethink on the importance of ensuring adequate intake of vitamin D in their daily diet and the importance of maintaining healthy body weight. It is also an urgent reminder to researcher to explore more on this topic as data and publications on this area is lacking particularly in the Asian region.

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**References**


