



## Vitamin D and Sleep Apnea: Beyond a Simple Association

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We would like to praise Dr. Liguori and colleagues for their elegant study showing that the use of continuous positive airway pressure (CPAP) for one week is able to revert vitamin D deficit in men.<sup>1</sup> Recent studies have demonstrated that vitamin D deficiency has been associated with sleep disorders in different populations.<sup>2</sup> Even being highly discussed, there are few studies relating its function to sleep.<sup>3</sup>

Currently due to the modern lifestyle, the population has remained indoors, preventing the sunlight exposure needed for the synthesis of the vitamin D precursor. It has been demonstrated that staying most of the time indoors can alter the cortisol and melatonin levels, causing a disturbance in the sleep-wake cycle.<sup>4</sup> It is important to emphasize that in the current study the absence of clinical information related to the groups could be a bias. Vitamin D deficiency is associated with obesity, as well as weight reduction is correlated with increased serum levels of cholecalciferol.<sup>5</sup> Thus, the increase in vitamin D levels found in male patients after the treatment with CPAP could possibly be linked to weight loss.

Another point to be considered is ethnicity. It is known that in Afro-descendent individuals with dark skin, solar exposure time must be greater for a suitable endogenous synthesis of vitamin D. They present vitamin D deficiency more frequently than other people, as well as daytime sleepiness index is higher.<sup>6</sup> Therefore, OSA individuals with different ethnic groups could require different time of CPAP treatment to achieve the same effect on the concentrations of vitamin D.

As a perspective, we would like to emphasize the importance of evaluating the inter-individual variability. There is evidence showing that the presence of polymorphisms in the vitamin D receptor gene is associated with vitamin D deficit.<sup>7</sup> Finally, we congratulate the authors for their work and expect that these results may help developing the research in this line, allowing a better understanding of vitamin D metabolism and its regulatory mechanisms associated with sleep.

### CITATION

de Oliveira DL, Hirotsu C, Tufik S, Andersen ML. Vitamin D and sleep apnea: beyond a simple association. *J Clin Sleep Med* 2015;11(11):1345.

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