ACADÉMIE NATIONALE DE MÉDECINE

Vitamin D and Covid-19

Press release from the French National Academy of Medicine

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Vitamin D is a prohormone synthesized in the dermis under the effect of ultraviolet light, i.e. sunrays, and then transported to the liver and kidney, where it is transformed into an active hormone. It is responsible for intestinal absorption of calcium and bone health.

But vitamin D also has unconventional effects. In particular, it modulates the functioning of the immune system by stimulating macrophages and dendritic cells [1,2,3]. It plays a role in regulating and suppressing the cytokine inflammatory response that causes the acute respiratory distress syndrome that characterizes the severe and often lethal forms of Covid-19.

A significant correlation between low serum vitamin D levels and mortality from the Covid-19 has been shown [4]. This phenomenon generally follows a North-South gradient, although there are exceptions such as the Nordic countries, where vitamin D nutrient supplementation, particularly from milk products, is systematic. However, Southern European countries show a surprisingly high prevalence of vitamin D deficiency, despite higher levels of sunlight [5]. This would explain why infants, who receive vitamin D regularly, have asymptomatic forms of Covid-19 and fewer complications.

Vitamin D cannot be considered as a preventive or a curative treatment for CoV-2 SARS infection. However, by mitigating the inflammatory storm and its consequences, it could be considered as an adjunct to any form of therapy.

The National Academy of Medicine

- points out that the administration of vitamin D per os is a simple and inexpensive measure, that is reimbursed by the French National Health Insurance;

- confirms its recommendation to ensure vitamin D supplementation in the French population in a 2012 report [2];

- recommends the rapid serum vitamin D (i.e. 25 OHD) testing in people over 60 years of age with Covid-19, and a loading dose of 50,000 to 100,000 IU in case of deficiency, which could help limit respiratory complications;

- recommends vitamin D supplementation of 800 to 1000 IU/day in people under 60, as soon as the diagnosis of Covid-19 is confirmed.

CONTACT PRESSE : Virginie Gustin +33 (0)6 62 52 43 42 virginie.gustin@academie-medecine.fr
ACADÉMIE NATIONALE DE MÉDECINE, 16 rue Bonaparte - 75272 Paris cedex 06
Site : *www.academie-medecine.fr* / **Twitter** : *@Acadmed*

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2 - Report of the National Academy of Medicine. Vitamin status, extra bony role and daily vitamin D requirements. Bull. Acad. Natle Med. 2012, 196, 1011.

3 - Laird E, Rhodes JM and Kenny RA. Vitamin D and inflammation: potential implications for severity of Covid-19. Irish med J, 2020, 113: 81.

4 - McCartney DM, Byrne DG. Optimisation of vitamin D status impact mortality from SARS -CoV-2 infection. Irish Med J .2020 113 : 58.

5- Lips P, Cashman KD, et al. Current vitamin D status in European and Middle East countries and strategies to prevent vitamin D deficiency: a position statement of the European Calcified Tissue Society. Eur J Endocrinol, 2019, 180: P23-P54.

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