

## Senior citizens with a COVID-19 infection often suffer from biofactor deficiency

A review published at the end of March analysed eight studies from different countries on nutritional status and the supply of **biofactors** such as vitamins and minerals in older people with COVID-19. “The strength of this systematic analysis is that this is the first study to examine the **nutritional status** and nutrient deficiencies in relation to the severity of the course of the disease in older patients with COVID-19,” the authors’ statement said.<sup>1</sup>

With regard to the general nutritional status of the senior citizens, it was found that the prevalence of malnutrition in elderly patients with COVID-19 is high and linked to negative health outcomes – including stays in intensive care units and deaths in hospital.

Five studies also provided scientific data on the biofactor supply and the course of COVID-19 disease in the senior citizens studied. Both the vitamin D<sub>3</sub> and the **magnesium** and **vitamin B<sub>12</sub>** status were associated with malnutrition, oxygen therapy and/or the intensive care of patients and the survival rate after COVID-19 disease.

### Experts recommend:

#### Pay attention to the biofactor supply in senior citizens

“The results of the studies analysed can be considered to be relevant and are also in line with the well-documented knowledge that elderly people in general can suffer more frequently from a deficiency of the biofactors **vitamin D<sub>3</sub>**, **vitamin B<sub>12</sub>** and **magnesium**,” emphasises Prof. Hans-Georg Classen, Chairman of the Society for Biofactors (GfB).

Almost 62% of the population have insufficient serum concentrations of vitamin D<sub>3</sub>.<sup>2</sup> Senior citizens are particularly affected by a vitamin D<sub>3</sub> deficiency, as in addition to insufficient alimentary intake from the age of 60 onwards, the body’s own vitamin D<sub>3</sub> synthesis decreases. On the one hand, the content of the vitamin D precursor 7-dehydrocholesterol in the skin is reduced, while on the other hand the capacity of the liver and kidneys to produce active vitamin D<sub>3</sub>, calcitriol (1,25(OH)<sub>2</sub>D<sub>3</sub>) diminishes. Furthermore, elderly people often require nursing and are immobile, as a result of which they spend less time outdoors, which further reduces synthesis via the skin.<sup>3</sup>

Around one third of people over the age of 65 are also affected by vitamin B<sub>12</sub> deficiency, with this figure rising to 37.6% among those over 85<sup>4</sup> and even up to 40% of senior citizens in inpatient nursing homes.<sup>5</sup> And according to the results of the ErnSTES study – a multi-centre study on the nutrition of elderly people in in-patient facilities – the magnesium supply of senior citizens is also often considered insufficient.<sup>6</sup>

“Therefore, attention should be paid as a general principle to the supply of the three biofactors in all senior citizens and – in accordance

with the above-mentioned connection between malnutrition and bio-factor deficiency and the course of COVID-19 disease – especially in elderly patients with a SARS-CoV-2 infection,” is the clear recommendation of the Society for Biofactors (GfB).

Further information on the biofactors referred to here, as well as others, can be found [here](#).

***Bibliography:***

<sup>1</sup> Damayanthi HDWT et al.: Nutritional determinants and COVID-19 outcomes of older patients with COVID-19: A systematic review. Arch Gerontol Geriatr. 2021 July-August; 95: 104411. Published online in 2021 31 March doi: 10.1016 / j.archger.2021.104411

<sup>2</sup> Rabenberg M et al.: Journal of Health Monitoring 2016, 1(2). Robert Koch Institute, Berlin. DOI 10.17886/RKI-GBE-2016-036

<sup>3</sup> Biesalski HK: Ernährungsmedizin (Nutritional Medicine) 2018, Stuttgart: Thieme Publishing House, p. 177

<sup>4</sup> Conzade R et al.: Prevalence and predictors of subclinical micronutrient deficiency in German older adults: results from the population-based KORA-Age Study. Nutrients 2017, 9: 1276

<sup>5</sup> Andrès E et al.: Vitamin B12 deficiency in elderly patients. CMAJ 2004, 171(3): 251-259

<sup>6</sup> Hesecker H et al.: ErnSTES Study, in DGE: Ernährungsbericht (Nutrition Report) 2008, 157-204