

# Letter to the Editor

## Good nutrition is essential for vaccine efficacy in elderly subjects

Dear Editor,

I appreciated the interesting and very well referenced review of vaccination of older adults by Chakraborty et al<sup>1</sup>. The elderly population is significantly more susceptible to COVID-19 and other respiratory infections, such as influenza as compared to younger adults.

One often overlooked factor in vaccine efficacy in older patients is nutrition. Even in wealthy nations, many elderly people are malnourished, especially in health care settings. A study<sup>2</sup> of 4,507 elders over age 65 (average age of 82.3 years) in 12 nations (10 European Nations plus South Africa and USA) reported that 22.8% were significantly malnourished- including 50.5% in rehabilitation, 38.7% in hospitals, 13.8% in nursing homes, and 5.8% in community living. An additional 46.2% of the older adults were considered at risk for malnutrition- meaning that 69.0% of older adults were either malnourished or at risk of malnutrition<sup>2</sup>.

A fair amount of research evidence links good nutritional status to better vaccine response. A meta-analysis<sup>3</sup> of 20 studies involving 1,979 adults reported that use of probiotics or prebiotics were associated with a significantly higher vaccine seroconversion rate of H1N1 influenza. Another meta-analysis<sup>4</sup> of 9 studies with 2,367 patients reported that vitamin D deficiency was associated with significantly lower influenza vaccination seroconversion in some (such as H3N2), but not all influenza strains. Higher consumption of fruits and vegetables (5+ servings daily) were associated with significantly better antibody response to Pneumococcal vaccine in 82 adults aged 65 to 85 years<sup>5</sup>.

Much more research and clinical attention is needed on the topics of nutrition's effect on vaccines in elders and elder nutrition in general. Since so many nutrients are required for immunity, multifaceted interventions involving multiple nutrients may be required to promote maximal immune protection responses by vaccines.

### Conflict of Interest

I report no financial conflicts of interest.

I have no financial interests in any pharmaceutical, vaccine, medical equipment, food, or nutritional supplement companies. All of the material came from other published medical journal papers or clinicaltrials.gov.

### References

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