

## **Background information on nutrition's role in supporting an optimal immune and vaccine response**

**Overview:** *Good nutrition plays a central role in ensuring an optimal immune and vaccine response, and in maintaining the health of populations worldwide. Studies show that efficient micronutrient supplementation can be highly effective in optimizing immunity, potentially supporting global vaccine programs to combat COVID-19.*

With new threats to health, supporting immunity has moved higher on the list of global health priorities. Both the Food and Agricultural Organization (FAO) and World Health Organization (WHO) emphasize the importance of good nutrition in supporting immune health, especially before, during, and after infection<sup>1</sup>. The same mechanisms that generate an effective immune response to infection can improve immune response to vaccination, given that vaccines stimulate the immune system in much the same way. Vitamins and minerals have been shown to support immune cells in their unique functions: macrophages, which destroy pathogens; T cells, which kill cells infected with viruses; and B cells, which secrete protective antibodies. These same cells also play a role in generating the body's response to vaccinations.

### **Micronutrients lay the foundation for an optimal immune and vaccine response**

Multiple studies highlight the importance of micronutrients - such as vitamins A, B, C, D, E, and folate, as well as zinc, selenium, copper, and magnesium - in supporting immunity, including antibody production. For instance, analysis of several influenza vaccination studies found that vitamin D-deficient consumers were one-third less likely than those with adequate vitamin D status to generate 'seroprotective' levels of antibodies to two of the three influenza strains in a vaccine<sup>2</sup> (meaning consumers with adequate vitamin D status are 50% less likely to become ill with the flu<sup>3</sup>).

The role of micronutrients in ensuring an optimal immunity and vaccine response is particularly interesting against the backdrop of COVID-19 and the associated vaccine rollout. According to a recent DSM Global Health Concerns Survey, 60% of consumers are currently worried about their immunity, with 43% specifically concerned about resistance to epidemic disease<sup>4</sup>. Ideally, adequate micronutrient intake could be achieved through a diverse, well-balanced diet.

<sup>1</sup> FAO. Maintaining a healthy diet during the COVID-19 pandemic, [PDF], 2020; WHO. Food and nutrition tips during self-quarantine, [guide], 2020

<sup>2</sup> Lee 2018

<sup>3</sup> Nauta 2009

<sup>4</sup> DSM Global Health Concerns Survey, March 2021

However, due to a range of lifestyle factors, the level of nutrients required to support optimal immune function can be difficult to reach through diet alone.

Micronutrient supplementation can help bridge the nutrient gap. Dietary supplements offer a safe, effective way to complement a balanced diet and can help support a healthy immune response to vaccines. While consumers are increasingly using supplements to support their health, particularly in developed nations, the positive impact of these solutions could be far greater. This is where we need your support.

### **How you can help raise awareness around the role of micronutrients in support of a healthy immune and vaccine response**

Nearly two-thirds of people worldwide are worried about immunity<sup>4</sup>. What they perhaps don't know is how they can easily optimize their immune response. You can support your readers and followers in optimizing and maintaining their micronutrient levels safely and effectively by sharing these insights. So they can start building an optimal immune and vaccine response.

**Journalists are also welcome to speak directly to DSM's industry thought leaders for further information or interviews about our efforts to support health and nutrition. Please reach out to [media.relations@dsm.com](mailto:media.relations@dsm.com) for further details.**

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### **DSM's role in enabling effective vitamin supplementation**

DSM is committed to the health and wellbeing of consumers around the world and is a trusted end-to-end partner for micronutrients. We are also the world's largest manufacturer of vitamin D3. Leveraging our science-based background, we are working with our nutrition industry partners to develop innovative supplementation solutions that maximize the potential of nutrition to optimize immune and vaccine responses for consumers globally.

More information can be found at [www.dsm.com](http://www.dsm.com).

Or find us on:

