

# Effect of enriching feeding tube nutrition on risk of infection among ICU patients

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Among mechanically ventilated intensive care unit (ICU) patients, receipt of high-protein nutrition via a feeding tube enriched with immune-modulating nutrients (such as glutamine, omega-3 fatty acids, and antioxidants) vs standard high-protein nutrition did not result in a significant difference in the incidence of new complications and may be harmful, as suggested by an increased risk of death at 6 months, according to a study in the August 6 issue of *JAMA*.

Several meta-analyses have reported that use of immune-modulating nutrients in enteral (via feeding tube) nutrition is associated with reductions in illness from infections and improved recovery from critical illness compared with standard enteral nutrition. However, there is a lack of consensus in guidelines regarding enteral administration of immune-modulating nutrients, according to background information in the article.

Arthur R. H. van Zanten, M.D., Ph.D., of the Gelderse Vallei Hospital, Ede, the Netherlands, and colleagues randomly assigned 301 adult ICU patients who were expected to be ventilated and to require enteral nutrition for more than 72 hours to either immune-modulating nutrients (IMHP) (n = 152) or high-protein enteral nutrition (HP) (n = 149). The patients were from 14 ICUs in the Netherlands, Germany, France, and Belgium. Patients were followed for up to six months.

The researchers found that there were no significant differences in the incidence of new infections between groups. Overall, 53 percent of those in the IMHP group vs 52 percent in the HP group had new infections.

No significant differences were observed in outcomes such as mechanical ventilation duration, ICU and hospital lengths of stay, and a measure of organ failure. The 6-month mortality rate was higher in the medical subgroup: 54 percent in the IMHP group vs 35 percent in the HP group.

"These findings do not support the use of high-protein enteral nutrition enriched with immune-modulating [nutrients](#) in these [patients](#)," the authors conclude.

Todd W. Rice, M.D., M.Sc., of the Vanderbilt University School of Medicine, Nashville, Tenn., writes in an accompanying editorial that many questions surrounding immunonutrition remain unanswered.

"Are there specific critically ill populations that may benefit from some immunomodulation or supplementation of individual immunomodulating agents, such as glutamine supplementation in burns or vitamin D replacement in severe sepsis? Does administration of multiple potential immunologic modulating agents together alter the individual effects of each agent? Combined administration in a single formula or supplement in all of these trials prevents implicating any single component (i.e., [omega-3 fatty acids](#), glutamine, or antioxidants). In addition, enteral and parenteral [intravenous] administration may result in differential effects. Although these uses of immunomodulating [nutrition](#) still need to be explored, the similarity of the results and the suggestion of harm from recently published, large, randomized trials of immunonutrition should strongly discourage intensivists from its routine prescription for [critically ill patients](#) in clinical practice outside the scope of well-designed randomized clinical trials."

**More information:** [DOI: 10.1001/jama.2014.7698](https://doi.org/10.1001/jama.2014.7698) and [DOI: 10.1001/jama.2014.7699](https://doi.org/10.1001/jama.2014.7699)

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