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## Bimuno Prebiotic resulted in positive effects on both the microflora and the immune response in elderly

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Modulation of the fecal microflora profile and immune function by a novel trans-galactooligosaccharide mixture (B-GOS) in healthy elderly volunteers<sup>1-3</sup>

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### ABSTRACT

**Background:** Aging is associated with reduced numbers of beneficial colonic bifidobacteria and impaired immunity. Galactooligosaccharides (GOSs) stimulate the growth of bifidobacteria in younger adults, but little is known about their effects in the elderly and their immunomodulatory capacity.

**Objective:** We assessed the effect of a prebiotic GOS mixture (B-GOS) on immune function and fecal microflora composition in healthy elderly subjects.

**Design:** In a double-blind, placebo-controlled, crossover study, 44 elderly subjects were randomly assigned to receive either a placebo or the B-GOS treatment (5.5 g/d). Subjects consumed the treatments for 10 wk, and then went through a 4-wk washout period, before switching to the other treatment for the final 10 wk. Blood and fecal samples were collected in the beginning, middle (5 wk), and end of the test period. Predominant bacterial groups were quantified, and phagocytosis, natural killer (NK) cell activity, cytokine production, plasma cholesterol, and HDL cholesterol were measured.

**Results:** B-GOS significantly increased the numbers of beneficial bacteria, especially bifidobacteria, at the expense of less beneficial groups compared with the baseline and placebo. Significant increases in phagocytosis, NK cell activity, and the production of antiinflammatory cytokine interleukin-10 (IL-10) and significant reduction in the production of proinflammatory cytokines (IL-6, IL-1 $\beta$ , and tumor necrosis factor $\alpha$ ) were also observed. B-GOS exerted no effects on total cholesterol or HDL-cholesterol production, however.

**Conclusions:** B-GOS administration to healthy elderly persons resulted in positive effects on both the microflora composition and the immune response. Therefore, B-GOS may be a useful dietary candidate for the enhancement of gastrointestinal health and immune function in elderly persons.



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