

Effects of Galacto-Oligosaccharides Supplementation on Gut Comfort and Fecal Microbiota in Female Adults With Gut Complaints

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Objectives: The prevalence of gastrointestinal (GI) discomfort is widespread and quality of life is strongly linked to a well-functioning GI tract. Over the years, many (dietary) solutions have been developed but the prevalence remains high. Prebiotic galacto-oligosaccharides (GOS) have been shown to support gut health in various target groups. Therefore, the objective of this study was to investigate the effect of 21 days consumption of 5.5g GOS on gut comfort in women (25–45 years old) with self-reported gut comfort complaints in a double blind randomized placebo controlled trial.

Methods: Healthy Dutch women (n = 65) with a self-reported gut comfort component score (consisting of bloating, flatulence, stomach ache, constipation, and diarrhea, range: 0–15) of at least 6 were enrolled. For three weeks, participants received a daily powder with either 5.5g Biotis™ GOS or maltodextrin to be taken during the first meal of the day. Weekly, validated questionnaires were conducted to study

the effect on gut comfort score, sleep, stress, and product tolerance. Furthermore, at start and after the intervention, stool samples were taken to study faecal microbiota.

Results: This study demonstrates that on group average the daily consumption of 5.5g GOS as well as maltodextrin, for 3 weeks in healthy females (average age: 34 yrs) with self-reported gut comfort complaints, improved the gut comfort component score. No differences were found between the two interventions, which indicates that a large placebo-effect was in place. However, the consumption of GOS did result in a 3 times higher odds to improve the gut comfort component score after three weeks. Daily consumption of 5.5g GOS resulted in a shift in the overall microbiota composition, with a clear 85% increase of faecal *Bifidobacterium*, which was not observed for the control group. Finally, posthoc analysis showed that GOS tends to decrease flatulence and to improve quality of sleep at 21 days of consumption.

Conclusions: Daily consumption of 5.5g GOS for 21 days among adult women 25–45 years with non-medical diagnosed gut complaints improved the gut comfort component score, but was not different from the control. However, consumption of GOS resulted in a higher odds to improve this score. Furthermore, the daily intake of 5.5g GOS significantly increased fecal *Bifidobacterium*.

Funding Sources: FrieslandCampina, The Netherlands.