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J Clin Gastroenterol. 2008 Sep;42 Suppl 3 Pt 2:S174-6.

Evaluation of prebiotic potential of refined psyllium (*Plantago ovata*) fiber in healthy women.

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Abstract

GOAL: To assess the effects of the consumption of psyllium seed husk on fecal bifidobacteria in healthy women and the ability of fecal bifidobacteria to metabolize psyllium seed husk in vitro.

BACKGROUND: Poor microbiologic evidences are nowadays available concerning the ability of psyllium seed husk to promote the growth of bifidobacteria in human gut.

STUDY: Eleven healthy women consumed 7.0 g/d of psyllium seed husk for 1 month. Viability of bifidobacteria in feces was assessed at different time points.

RESULTS: In vivo results showed that the average fecal content of viable bifidobacteria was not significantly affected even if fecal counts were found to increase significantly after treatment in 6 out of 11 women having low initial concentration. In vitro trials conducted on bifidobacteria strains isolated from treated women failed to confirm the prebiotic potential of undigested psyllium seed husk, whereas treatment with simulated gastric and pancreatic juices and mimicking physical and chemical alterations during human gut transit allowed fecal *Bifidobacterium* isolates to metabolize psyllium seed husk as carbon source in a growth medium deprived of sugar.

CONCLUSIONS: Psyllium seed husk can be metabolized by bifidobacteria only after partial hydrolysis. Bifidogenic potential can be detected in healthy women only in case of low level of fecal bifidobacteria before treatment.

PMID: 18685505 [PubMed - indexed for MEDLINE]

MeSH Terms, Substances

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