

Dietary fiber supplementation with psyllium or gum arabic reduced fecal incontinence in community-living adults

Bliss DZ, Jung HJ, Savik K, et al. **Supplementation with dietary fiber improves fecal incontinence.** *Nurs Res.* 2001 Jul-Aug;50:203-13.

QUESTION

In community-living adults with incontinence of loose or liquid stools, does dietary fiber supplementation with psyllium or gum arabic reduce fecal incontinence?

DESIGN

Randomized {allocation concealed*}†, blinded {clinicians, participants, and statisticians}†,* placebo-controlled trial with 8-day postintervention comparison.

SETTING

Colorectal surgical practice and community in Minneapolis, Minnesota, USA.

PARTICIPANTS

42 adults (mean age 61 y) with at least weekly fecal incontinence of loose or liquid stools. Exclusion criteria were rectal prolapse, colon cancer, rectal fistula, ulcerative colitis, or removal of some portion of the gastrointestinal tract. No participant had biofeedback training for pelvic muscle exercises. Follow-up was 93%.

INTERVENTION

Participants were allocated to receive 31 days of dietary fiber supplementation with psy-

llium, 7.1 g/d ($n = 13$); gum arabic, 25 g/d ($n = 13$); or placebo given as pectin, 0.25 g/d ($n = 13$). Supplements were mixed into fruit juice and divided into 2 servings for consumption during the morning and evening meals. Participants were instructed to maintain their usual diet. Those who were taking antidiarrheal medication were advised not to alter the type and amount during the study.

MAIN OUTCOME MEASURES

Daily self-reported stool characteristics, including rate of incontinent stools, stool consistency, stool frequency, and stool weight.

MAIN RESULTS

The rates of incontinent stools for the psyllium and gum-arabic groups were lower than those for the placebo group (Table). The psyllium and gum-arabic groups had lower rates of loose and unformed or liquid stools

than did those in the placebo group ($\chi^2(6) = 20.8$, $P = 0.002$). No difference existed between the 3 groups for stool frequency, wet weight of stool, or weight of total stool solids.

CONCLUSION

In adults living in the community, dietary fiber supplementation with psyllium or gum arabic reduced the rate of incontinent stools and improved stool consistency.

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*See Glossary.

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Psyllium, gum arabic, and placebo for fecal incontinence at 8 days

Outcome	Psyllium	Gum arabic	Placebo	P value (psyllium + gum arabic vs placebo)
Proportion of incontinent stools	17%	18%	50%	0.002

COMMENTARY

Fecal incontinence is a socially disabling and aesthetically displeasing condition that negatively affects patients' dignity, self-confidence, and independence. Diseases of the rectosigmoid colon, such as dysfunction of the pelvic musculature, caused by aging or neurogenic processes are usual causes of this problem. In the absence of neurologic and mobility impairment, continence is a fine balance between fecal consistency, anorectal sensation, and sphincter function. Recently, rectal compliance and rectoanal sensation have been shown to be important in the pathophysiology of fecal incontinence (1). Although therapy of the specific disorders may improve outcomes, treatment is generally unsatisfactory. A paucity of data exists from randomized controlled trials of treatments, including dietary fiber, for fecal incontinence.

In this trial by Bliss and colleagues, the cause of incontinence in the 39 patients who completed evaluation and treatment was not stated. Furthermore, the doses of psyllium and gum arabic were progressively increased during the first 6 days of administration to decrease the risk for flatus and fecal incontinence, but the final doses are not known. Nevertheless, the results show that about 7.1 g of psyllium and 25 g of gum arabic given in 2 daily doses reduced loose and unformed stools and improved incontinence more than did placebo during the 4 weeks of therapy. Although stool frequency and wet weight of stool did not differ for the 3 groups before and after treatment, patients who

received psyllium had the highest total water-holding capacity. An inverse relation between total water-holding capacity and the percentage of incontinent stools was observed. Compositional analysis of the stool showed that the total amount of fiber; the constituents of stool fiber, such as neutral sugars, uronic acids, and lignin; and the daily excretion of total short-chain fatty acids did not differ among the 3 groups before and after treatment. Thus, the mechanism by which psyllium and gum arabic improved fecal incontinence was not evident in this study, although the increased water-holding capacity may have played a part.

The results of this small, well-designed, randomized trial show that fecal incontinence can be effectively treated by simply adding psyllium or gum arabic to the diet. What is not known is the mechanism of action and whether the effects are long lasting. However, the findings of Bliss and colleagues' study will probably have a positive effect on patients with fecal incontinence.

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Reference

1. Salvioli B, Bharucha AE, Rath-Harvey D, et al. Rectal compliance, capacity and rectoanal sensation in fecal incontinence. *Am J Gastroenterol.* 2001;96: 2158-68.