National Institute of Diabetes and Digestive and Kidney Diseases: Biofeedback for Managing Constipation and Fecal Incontinence

Randomized controlled clinical trials of biofeedback to self-monitor pelvic floor muscle contraction exercises have demonstrated the benefits of this treatment for constipation and fecal incontinence. Biofeedback was shown to work even better than some standard treatments such as laxatives or unmonitored exercises. Additional analyses of data from these trials continue to yield new information on long-term benefits of this treatment.

Lead Agency:

National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)/National Institutes of Health (NIH)

Agency Mission:

a. Conduct and support basic, clinical, and translational research on diseases of internal medicine and related subspecialty fields, including diabetes and other endocrine and metabolic diseases; liver and other digestive diseases; nutritional disorders; obesity; kidney and urologic diseases; and hematologic diseases, as well as fundamental research in many basic science disciplines.

b. Foster research training and mentoring at multiple career stages to maintain pipeline of outstanding investigators in these research fields.

c. Disseminate science-based knowledge gained from NIDDK-funded research to health care providers and the public through outreach and communications.

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Partner Agency:

NIH Office of Research on Women's Health
National Center for Research Resources (General Clinical Research Center program)
Milan Pharmaceuticals
Jansen Pharmaceuticals
Sandhill Scientific Incorporated

General Description:

Biofeedback for Managing Constipation and Fecal Incontinence
Constipation, lodging of stool in the rectum, and fecal incontinence, an inability to control bowel movements, are more common in older adults. These conditions can lead

to embarrassment and social isolation, and they often go untreated. Constipation commonly causes fecal incontinence, such that approaches to managing these conditions are similar. One of the available treatments for these conditions is biofeedback, which involves the use of monitors that record contractions of the pelvic floor muscles in order to help individuals to train these muscles and achieve better control over their bowel movements. In this study, NIDDK-supported researchers tested the use of biofeedback to assess whether it was truly effective relative to other treatment options in managing constipation and fecal incontinence.

Biofeedback sessions were used in a randomized controlled clinical trial to teach patients with constipation to relax their pelvic floor muscles in order to reduce straining. The trial showed that this treatment was helpful to patients with a type of constipation known as pelvic floor dyssynergia, associated with inappropriate contraction rather than relaxation of the pelvic floor muscles during defecation. Biofeedback treatment in these patients resulted in improvements in terms of their bowel movement frequency and straining, bloating, and abdominal pain. Compared to continuous use of a laxative or muscle relaxant, biofeedback was shown to be more effective, and its benefits were sustained in one study throughout 2 years of follow up.
This project also demonstrated a benefit for biofeedback in patients with fecal incontinence, which commonly results from constipation. Results from a randomized controlled clinical trial indicated that biofeedback is better at alleviating fecal incontinence than the standard practice of Kegel exercises (contractions of the pelvic floor muscles) performed without the benefit of biofeedback monitoring. Individuals with fecal incontinence found that biofeedback improved their symptoms, including reducing episodes of incontinence. Continuing analyses of the information collected in these trials have assessed the long-term durability of biofeedback's effects on fecal incontinence and analyzed the health care costs associated with this condition.

Excellence: What makes this project exceptional?

The researchers showed that biofeedback works better than some commonly used treatments to reduce symptoms of constipation or fecal incontinence.

Significance: How is this research relevant to older persons, populations and/or an aging society?

Older persons are at increased risk for developing constipation and fecal incontinence. These conditions can lead to embarrassment and isolation, severely reducing quality of life and preventing individuals from seeking medical care to alleviate them.

Effectiveness: What is the impact and/or application of this research to older persons?

Research to identify which available treatments are effective and safe for alleviating constipation and fecal incontinence can improve the clinical management of these conditions in older persons, who are commonly affected by them.

Innovativeness: Why is this research exciting or newsworthy?

Prior to this research, findings from uncontrolled studies suggested, but did not conclusively prove, that biofeedback might be helpful for individuals suffering from constipation or fecal incontinence. Biofeedback is an attractive treatment option because it carries very little risk of adverse events compared with other possible treatments. These randomized, controlled clinical trials were the first to provide definitive support for the efficacy of biofeedback as a treatment for these conditions.