

42 y/o F presents to clinic w/ chronic constipation x8 months. Pt reports excessive straining, prolonged time on toilet, and sensation of incomplete evacuation despite increasing fiber intake and drinking more water. Denies fever, weight loss, abdominal pain, hematochezia, or melena. Pt is interested in non-pharmacologic methods prior to initiating laxatives.

Search question: In adults with functional constipation, does modified toileting posture compared with standard toilet positioning improve bowel evacuation and straining symptoms?

Question type: What kind of question is this?

Prevalence

Screening

Diagnosis

Prognosis

Treatment

Harms

Assuming that the highest level of evidence to answer your question will be meta-analysis or systematic review, what other types of study might you include if these are not available (or if there is a much more current study of another type)?

Since toilet positioning is a pretty niche topic in medical literature, there aren't tons of massive, high-level systematic reviews or meta-analyses out there to begin with. If those are missing, then the next best option would be RCTs that directly compare a footstool or squatting device against regular sitting under controlled conditions. But honestly, because the data is so limited on this topic, we would most likely need to include cohort studies where patients are observed over time to see how symptoms like straining and sense of incomplete evacuation change with continued use of the intervention. Even smaller clinical intervention trials or observational data would be worth pulling in just to get some usable insights, though we'd have to take surveys with a grain of salt since remembering how hard you strained weeks ago is highly subjective and introduces a lot of recall bias.

PICO search terms:

Population	Intervention	Comparison	Outcome
Adult(s)	Modified toileting posture	Standard toilet positioning	Bowel evacuation
Chronic constipation	Footstool	Standard sitting	Straining
Functional constipation	Squatting posture	90-degree sitting	Bowel movement
	Defecation posture device		Defecation time

Search tools and strategy used: Please indicate what databases/tools you used, provide a list of the terms you searched together in each tool, and how many articles were returned using those terms and filters. Explain how you narrowed your choices to the few selected articles. For example, if your search returned 25 articles among the several databases used, what was the process used to determine which articles to use?

Database	Search Terms Used	Number of Results	Filters Applied
PubMed	("constipation" OR "functional constipation") AND ("toileting posture" OR "footstool" OR "squatting" OR "defecation postural modification device") AND ("standard positioning" OR "sitting") AND ("straining" OR "evacuation" OR "bowel movement")	3	Last 10 years (2016-2026), English Language, Humans
Cochrane	("constipation") AND ("toileting posture" OR "footstool" OR "squatting") AND ("straining" OR "evacuation")	3	2020-2026, English
Google Scholar	("constipation") AND ("toileting posture" OR "footstool" OR "squatting") AND ("straining" OR "evacuation")	82	2022-2026, Review articles only

I used a total of three databases for this search: PubMed, Google Scholar, and Cochrane. As mentioned before, because toilet positioning is a pretty niche topic in medical literature, I knew from the start that I wouldn't be flooded with papers. My PubMed search only pulled up 3 results. Since that pool was so small, I didn't need a massive screening process. I just read through all three papers fully and ended up weeding out one article that was hyper-focused on complex biofeedback physical therapy for pelvic floor disorders since it didn't pertain to my clinical question. Next, I looked into Cochrane, which also only brought back 3 results. When I dug into them, they turned out to be either identical duplicates of the trials I had already grabbed from PubMed or completely off-topic for general functional constipation. Seeing such a tiny yield across both major clinical trial databases really hammered home how little high-level trial data exists for this kind of lifestyle modification. Google Scholar gave me the most material to work with, yielding 82 results after I filtered for recent review articles published between 2022 and 2026. To narrow down those 82 hits into something actually useful, I skimmed through the abstracts and systematically tossed out papers that focused on pediatric populations or structural surgical issues. In the end, one article was chosen from each database.

1. Sitting vs. squatting: a scoping review of toilet postures and associated health outcomes

Citation: Rahgoshay N. Sitting vs. squatting: a scoping review of toilet postures and associated health outcomes. BMC Public Health. 2025 Jul; 25(1):1432.

Article Type: Scoping review

Abstract

Background/objective: The comparison between squatting and sitting toilets involves complex health, ergonomic, and design considerations. This scoping review aims to synthesize evidence on the digestive, musculoskeletal, and ergonomic health outcomes associated with squatting and sitting toilet postures, while also exploring related health impacts (e.g., urinary and cardiovascular) and design considerations.

Methods: This scoping review was conducted on January 1, 2024, searching Scopus, PubMed, and Web of Science, following Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines. Inclusion criteria were defined using the patient/population, intervention, comparison and outcomes (PICO) framework. Two reviewers independently screened titles, abstracts, and full texts, supplemented by hand searches in Google Scholar and Science Direct, and snowballing. Methodological quality was appraised using Joanna Briggs Institute (JBI) checklists.

Results: Forty-two studies were analyzed. Squatting may reduce digestive strain and enhance bowel evacuation, potentially benefiting constipation, while sitting toilets may increase bowel-related issues but provide comfort for specific populations, such as older adults. Musculoskeletal outcomes vary, with squatting linked to strain in vulnerable groups and sitting toilets reducing joint stress when ergonomically designed. Ergonomic innovations, such as adjustable seats and non-slip surfaces, show promise in improving comfort and minimizing health risks. Methodological limitations, including small sample sizes and inadequate control of confounders, preclude definitive conclusions.

Conclusion: Squatting and sitting toilet postures differentially influence digestive health, musculoskeletal strain, and sanitation, shaped by individual needs, cultural practices, and environmental factors. Practical implications include developing adjustable, hygiene-focused, culturally sensitive toilet designs to enhance public health. Longitudinal studies with robust methodologies are needed to clarify chronic health impacts and optimize user-centered toilet design solutions.

Key points:

- Squatting is considered more natural for human defecation because it increases the anorectal angle to approximately 100–110 degrees, which straightens the rectum and allows for easier bowel evacuation
- Squatting typically requires less abdominal pressure and straining compared to sitting, which may alleviate symptoms of constipation and hemorrhoids
- Using footstools or defecation postural modification devices while sitting can simulate a squatting posture
- Defecating in a sitting position (anorectal angle of 80-90 degrees) is associated w/ higher straining effort and an increased risk of diverticulosis

I wanted to establish a rock-solid anatomical foundation before looking at individual clinical trials. It is easy to dismiss a toilet footstool as an overhyped online trend, but this paper pulls data from 42 different studies to prove there is real physics and biology at play. By breaking down how a 90-degree sitting angle physically pinches the rectum via the puborectalis muscle vs how a squatting angle opens it up, this review connects basic anatomy directly to patient symptoms. It gave me the exact mechanical rationale needed to explain to a patient why their current bathroom setup might be working against them.

2. Using a footstool does not aid simulated defecation in undifferentiated constipation: A randomized trial

Citation: Trieu RQ, Prott G, Sequeira C, Jones M, Mazor Y, Schnitzler M, Malcolm A. Using a footstool does not aid simulated defecation in undifferentiated constipation: A randomized trial. *Neurogastroenterol Motil.* 2023 Jul;35(7):e14580.

Article Type: Randomized controlled trial

Introduction

The use of a footstool has been advocated to optimize posture when sitting on the toilet and thus facilitate bowel evacuation. We aimed to assess the alterations in defecatory posture, and the changes in simulated defecation with use of a footstool in patients with constipation.

Methods

Forty-one patients (female 93%, mean 52 year, SD 14 year) with constipation referred to a tertiary neurogastroenterology unit were enrolled. A bowel questionnaire, Hospital Anxiety and Depression Scale, and Rome questionnaire were administered prior to anorectal manometry. Each patient underwent three rectal balloon expulsion tests in randomized order with no footstool, a 7-inch, and a 9-inch footstool. Additional assessments included angle between spine and femur, and visual analogue scales assessing ease of evacuation, urge to defecate, and discomfort with expulsion.

Key Results

Defecatory posture was significantly altered by footstool use, with progressive narrowing of the angle between the spine and femur as footstool height increased ($p < 0.001$ for all comparisons). Compared with no footstool, the use of a footstool was not associated with a change in balloon expulsion time and there was no difference between the two footstool heights. Subjectively, no significant change was identified in any of the three perceptions of balloon expulsion between no footstool and footstool use.

Conclusions and Inferences

Although the use of a footstool led to changes in defecatory posture, it did not improve subjective or objective measures of simulated defecation in patients with undifferentiated constipation. Therefore, the recommendation for its use during evacuation cannot be applied to all patients with constipation.

Key points:

- The use of a footstool successfully and significantly narrowed the angle between the spine and femur, creating a more acute, "squat-like" posture as the height of the stool increased
- Despite the postural changes, the study found no statistically significant difference in balloon expulsion time (a measure of bowel evacuation)
- Subjectively, patients reported no significant improvement in the ease of evacuation, the urge to defecate, or levels of discomfort with the use of a footstool compared to standard toilet positioning
- Patients with a higher BMI and shorter stature were more likely to have faster expulsion times, indicating that individual physiological traits may influence the effectiveness of different positions

I selected this RCT because it provides a necessary reality check to the theoretical anatomy. In medicine, we can't just assume that because something looks great on paper that it will automatically cure every patient who walks through the clinic door. This study showed that a footstool did not significantly improve balloon expulsion times in a controlled setting, which is an important reminder that constipation is not one single problem but rather a complex one. For some patients, the issue is more related to slow gut motility or nerve function rather than positioning alone. Including this study helps keep expectations realistic and supports more careful, individualized recommendations instead of assuming a simple fix will work for everyone.

3. Implementation of a Defecation Posture Modification Device: Impact on Bowel Movement Patterns in Healthy Subjects

Citation: Modi RM, Pinkhas D, Hinton A, Thomas G, Groce RJ, Meyer M, Levine E, Stanich PP. Implementation of a Defecation Posture Modification Device: Impact on Bowel Movement Patterns in Healthy Subjects. Am J Gastroenterol. 2017 Oct;112:S52-S53.

Article Type: Prospective cross-over study

Background:

The introduction of DPMDs has brought increased awareness to bowel habits in western populations.

Materials and Methods:

A prospective crossover study of volunteers was performed that included real-time collection of data regarding bowel movements (BMs) for 4 weeks (first 2 wk without DPMD and subsequent 2 wk with DPMD). Primary outcomes of interest included BM duration, straining, and bowel emptiness with and without DPMD use.

Results:

In total, 52 participants (mean age, 29 y and 40.1% female) were recruited for this study. At baseline 15 subjects (28.8%) reported incomplete emptying, 23 subjects (44.2%) had increased straining, and 29 subjects (55.8%) noticed blood on their toilet paper in the past year. A total of 1119 BMs were recorded (735 without DPMD and 384 with DPMD). Utilizing the DPMD resulted in increased bowel emptiness (odds ratio, 3.64; 95% confidence interval (CI), 2.78-4.77) and reduced straining patterns (odds ratio, 0.23; 95% CI, 0.18-0.30). Moreover, without the DPMD, participants had an increase in BM duration (fold increase, 1.25; 95% CI, 1.17-1.33).

Conclusions:

DPMDs positively influenced BM duration, straining patterns, and complete evacuation of bowels in this study.

Key points:

- The use of a defecation posture modification device (DPMD) led to significantly reduced straining patterns (OR 0.23) and increased bowel emptiness (OR 3.64).
- Without the DPMD, participants experienced a 1.25-fold increase in duration compared to when they used the device
- DPMD worked better for participants who identified as "more constipated" at baseline (OR 8.98 for emptiness) compared to those with normal or diarrhea-prone habits (OR 3.10)

I chose this study because it takes the research out of the artificial and high-stress lab setting and puts it right into the comfort of the patient's own homes. This study followed over a thousand actual bowel movements, which makes the findings much more applicable to primary care. What stood out most was the subgroup analysis. While a posture device might only give a minor, unnoticeable boost to a healthy person, it provided a massive, statistically significant reduction in straining for the exact population we care about: the folks dealing with baseline constipation.

4. Use of a footstool improves rectal balloon expulsion in some patients with defecatory disorders

Citation: Ulsh L, Halawi H, Triadafilopoulos G, Gurland B, Nguyen L, Garcia P, Sonu I, Fernandez-Becker N, Becker L, Sheth V, Neshatian L. Use of a footstool improves rectal balloon expulsion in some patients with defecatory disorders. *Neurogastroenterol Motil.* 2024 Jul;36(7):e14781.

Article Type: Retrospective review

Background

Whether patients with defecatory disorders (DDs) with favorable response to a footstool have distinctive anorectal pressure characteristics is unknown. We aimed to identify the clinical phenotype and anorectal pressure profile of patients with DDs who benefit from a footstool.

Methods

This is a retrospective review of patients with high resolution anorectal manometry (HR-ARM) and balloon expulsion test (BET) from a tertiary referral center. BET was repeated with a 7-inch-high footstool in those who failed it after 120 s. Data were compared among groups with respect to BET results.

Key Results

Of the 667 patients with DDs, a total of 251 (38%) had failed BET. A footstool corrected BET in 41 (16%) of those with failed BET. Gender-specific differences were noted in anorectal pressures, among patients with and without normal BET, revealing gender-based nuances in pathophysiology of DDs. Comparing patients who passed BET with footstool with those who did not, the presence of optimal stool consistency, with reduced instances of loose stools and decreased reliance on laxatives were significant. Additionally, in women who benefited from a footstool, lower anal pressures at rest and simulated defecation were observed. Independent factors associated with a successful BET with a footstool in women included age <50, Bristol 3 or 4 stool consistency, lower anal resting pressure and higher rectoanal pressure gradient.

Conclusion & Inferences

Identification of distinctive clinical and anorectal phenotype of patients who benefited from a footstool could provide insight into the factors influencing the efficacy of footstool utilization and allow for an individualized treatment approach in patients with DDs.

Key points:

- In a study of 667 patients, 16% (41 out of 251) of those who initially failed a standard Balloon Expulsion Test (BET) were able to successfully pass the test when using a 7-inch-high footstool
- Modified toileting posture using a footstool is intended to increase hip flexion, which helps relax the puborectalis muscle and straighten the anorectal angle, thereby reducing resistance during evacuation
- Women who benefited from the footstool exhibited notably lower anal pressures at rest and during simulated defecation compared to those who did not benefit

We already saw that a footstool physically narrows the spine-femur angle, but this paper actually shows who it works for in real life. It rescued rectal evacuation for 16% of patients who completely failed standard toilet sitting, and the biggest winners were younger women under 50 with normal stool texture and lower muscle tension. In the clinic, this keeps me from just guessing or tossing out a blanket recommendation to every patient who walks in with constipation.

What is the clinical “bottom line” derived from these articles in answer to your question?

We see chronic constipation all the time in family medicine. Usually, it’s met with a quick prescription for MiraLAX or a vague recommendation to drink more water and eat more fiber. Patients frequently ask about those toilet footstools they see online, and honestly, I wasn't sure if they were just a marketing gimmick. Looking at the evidence, the reality is practical.

Anatomically, mimicking a squatting posture by leaning forward or putting your feet on a stool definitely straightens the path out of the rectum by relaxing the puborectalis muscle, which makes evacuation mechanically easier. While lab-based testing in mixed patients shows that a footstool isn't a cure-all for severe motility or nerve disorders, real-world tracking shows that patients who struggle with straining and incomplete emptying get notable relief. Given that a toilet footstool is cheap, entirely safe, and has zero side effects compared to a lifetime of laxatives, it’s an excellent first-line recommendation for adults with functional constipation. It might not fix a profound colonic motility issue, but for the average patient struggling to pass hard stools comfortably, changing their posture is an easy, low-risk win. With that being said, the next time that you’re constipated, try squatting!