



Mark Davis, ND
The IBD Specialty Center
At the Wisdom Path Healing Center
7120 Carroll Ave, Takoma Park MD 20901
(T) 301.364.9648 (F) 971.239.1913
NPI# 1972888378, License #27
info@IBDspecialty.com

Fecal Microbiota Transplantation for colonic Inflammatory Bowel Disease

IBD Specialty Home How-to Guide

Introduction

Ulcerative colitis (UC) and Crohn's colitis (CC) are the major types of colonic inflammatory bowel disease (IBD). Someone with colonic IBD has colon inflammation caused by their immune system, and evidence suggests that colon flora trigger the inflammatory response in genetically susceptible people. A human colon contains 100-200 species of bacteria in a complex ecosystem called the microbiota, and we don't know if the inflammation in IBD is triggered by the presence of "bad" bacteria, the absence of "good" ones, an imbalance, or an incorrect ratio.

In our patient population, about 75% of IBD patients respond to a ten-day series of Fecal Microbiota Transplantation (FMT) with a significant improvement in symptoms. About 25% of UC patients and over half of CC patients who receive FMT achieve remission. An excellent meta-analysis indicates an equivalent remission rate¹.

Home FMT consists of collecting stool from a rigorously screened healthy donor, suspending it in filtered water or salt water, filtering out large particles, and administering the resultant mix of liquid and bacteria to the patient's colon via retention enema. The donor stool contains the full range of healthy colon bacteria in a balanced ratio, and these colon bacteria often appear to crowd out the patient's previous bacteria, which can eliminate the colon flora contribution to the patient's colonic IBD.

The FDA considers FMT to be an experimental treatment, so clinicians in the United States are not allowed to prepare or administer FMT for their patients with IBD. The FDA does not place rules on what individuals can do for themselves at home, and many people with IBD have experimented with home FMT. Sometimes they've done this in ways that are unsafe in some ways. In the interest of harm reduction, this guide provides educational information for conducting safe home FMT for colonic IBD.

¹ Colman RJ, Rubin DT. Fecal microbiota transplantation as therapy for inflammatory bowel disease: A systematic review and meta-analysis. *J Crohns Colitis*. 2014 Dec 1;8(12):1569-1581.



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Equipment

Here's what you need to assemble for an initial series of ten FMT retention enemas:

From the department store:

- A household blender that will only be used for this purpose
- A four-inch double-mesh kitchen strainer
- A quart-size container or pitcher to strain into
- A flexible spatula (silicone works well)

From the pharmacy:

- Ten Fleet (or generic) enema bottles (4.5 oz). Some people may benefit from acquiring some pediatric size bottles (if the donor has smaller BMs or they can't retain for long) or "extra" size bottles or disposable enema bags (if donor has larger BMs or it is easy for them to retain).
- About 2.5 liters of distilled water
- Paper towels, disposable gloves, and other cleaning equipment to use during and after the preparation and administration of the FMT
- A disposable or re-usable large-volume enema kit to flush the colon before FMT
- **Optional:** Bowel lavage solution such as GoLytely or two 10-oz bottles of magnesium citrate; talk with your doctor about this.
- **Optional:** Over the counter loperamide tablets such as Imodium, laxatives such as Miralax (for the donor), and flushable wipes; talk with your doctor about this.
- **Optional:** Antibiotics or other antimicrobial treatments. Biofilm disruptors like NAC or chelators; talk with your doctor about these.
- **Optional:** Apple pectin

Patient Instructions

- Starting at least two weeks before your FMT, consume a low to no fiber diet, as described below, to starve out your colon bacteria:
 - As much meat, eggs, dairy, and refined grains (white rice, white bread, refined pasta) as you want. As you emphasize these things, avoid any if you notice that they aggravate your abdominal pain or other symptoms.



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- In addition, **small amounts** of lower-fiber fruits and veggies are OK: peeled apple, pear, peach, plum & potato as well as melon, cherries, grapes, lettuce, pumpkin and other winter squash, small zucchinis, cucumber.
- In the week or two before FMT, practice a large-volume water cleansing enema (see instructions below) at least once, and small-volume water retention enema with escalating amounts of water to determine a maximum volume that you can realistically retain for 4+ hours. You might want to start by trying to retain 4.5 ounces of just water for four hours. If that is easy, try the “extra” size (7.8 ounces), or if that is too difficult, try the pediatric size enema bottle.
- For 1-2 days before the home FMT is scheduled, consume only water and other non-particulate, non-caloric liquids, such as broth, coffee, or tea.
- If you are using an oral bowel lavage (only recommended if you’ve previously taken PEG or Mg citrate without a lasting laxative effect), follow these instructions: Upon waking on the morning of **the day before** your first infusion, consume the PEG bowel prep (as directed) or one ten-ounce bottle of Mg citrate. If you are passing any formed stool four hours later, drink the other ten-ounce bottle. If you are passing brown liquids, only drink half of the second bottle, and if you are only passing clear recta discharge, don’t drink any more. You may want to apply lubricant to the anus before beginning the bowel lavage, and after subsequent bowel movements that evening. Flushable moist wipes may also help alleviate discomfort. Magnesium citrate is very dehydrating, so be sure to drink enough liquids (at least 8 oz. every hour)—warm liquids may keep you from feeling chilled.
- If you don’t tolerate oral bowel lavage, you can substitute a large-volume water cleansing enema one hour before your first infusion—directions below. If you choose oral bowel lavage you may want to add a cleansing enema.
- If you are taking antibiotics or other antimicrobials and the prescriber supports discontinuing them during FMT, take your last dose 24-48 hours before your first FMT retention enema.
- On the day of the FMT: if using loperamide (suggested if you’re having bowel urgency or greater than three bowel movements per a day), take two (2) 2-mg



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tablets one or two hours before administering FMT. Continue to consume only non-particulate liquids until the FMT. After you've started your infusions, eating a more varied diet with insoluble fiber (fruits, vegetables, beans, nuts, seeds, whole grains) will help the colon flora stay established, so you should include them. Be cautious at first with fiber foods that have aggravated your condition in the past.

- You can choose to take 20mg of apple pectin on each day you do FMT; this may improve results and help them last longer.

Donor Instructions

- You must have a formed bowel movement every day, and not have taken antibiotics in the past three months.
- Your health-care provider should determine through history, physical examination, and laboratory screening that you are free of any potentially transmissible conditions, including infectious, autoimmune, atopic, metabolic, and mood-related. The provider can use the American Gastroenterology Association protocol for laboratory screening, available at:

http://www.gastro.org/research/Joint_Society_FMT_Guidance.pdf

- Donors who are long-term intimate partners or children of the patients often choose to waive some or all of the serum laboratory testing.
- If the patient has any known food allergens (e.g. peanuts) or sensitivities (e.g. dairy or gluten), do not consume those foods for five days before the FMT. For at least a week before the donations, consume a diet rich in natural fibers like whole grains, fresh fruits and vegetables, nuts and seeds, and drink plenty of water (at least half your body weight in ounces per day) to ensure bowel regularity and nourish your colon flora.
- If you aren't sure you will have a bowel movement, you could use a mild over-the-counter laxative such as "Miralex" according to directions before the donation.



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- If you have any symptoms of acute infectious disease, like fevers, vomiting, or diarrhea, wait until you are better before scheduling the donation. If you become sick while donating, stop until you are better for at least 48 hours.
- On the day of the FMT, collect your entire bowel movement in a disposable container. You may want to practice this on an earlier day if you've never collected your stool before. You may want to use plastic wrap inside a disposable container for ease of collection and clean up.

FMT preparation & administration instructions (by patient, donor, or other)

- Add the stool and at least enough distilled water to make the final solution pourable (four to eight ounces) to the blender. Blend for 15-30 seconds, until homogenized, then pour through the double-mesh strainer (using the flexible spatula to push the fecal slurry through the strainer) into a quart container or pitcher, then pour into the enema bottle(s). A fecal slurry made from smaller stool may fit better into a pediatric bottle, and slurry made from a larger one into an extra-large bottle. If the patient has experimented with retention enemas to determine their optimal retention volume, aim for that amount.
- Situate the patient in a comfortable spot, lying on his or her left side with the left leg straight and the right leg slightly bent, or on hands and knees with the buttocks elevated. Optional: lower body slightly elevated by pillows or blankets
- Gently direct the tip of the enema bottle into the patient's anus until the bottle tip is completely inserted, and slowly squeeze to dispense the fecal slurry. When all of the slurry has been delivered, remove the bottle tip and discard. Briefly tamp the anus with toilet paper if needed.
- Patient should try to retain the slurry for 4-6 hours. During that time, it may be helpful to perform some gentle counter-clockwise abdominal massage, and for the patient to roll from the left side to the back, then the right side, then onto the back with the buttocks elevated, for 5-10 min in each position.
- If the patient experiences abdominal discomfort, deep slow breathing that expands the belly can help alleviate the sensation.
- Repeat for a total of ten days, or as recommended by your healthcare provider.



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- Practitioners may suggest bi-weekly FMT retention enemas for eight or more weeks depending on the patient's outcome.

If you are freezing fecal slurry for later use

After preparing the strained fecal slurry, pour it into the enema bottle(s), and immediately place the bottle(s) in a cooler with dry ice or a laboratory freezer. One to two hours before it is time to administer the infusion, remove the bottle from the cooler and place in a container of room temperature water, with water reaching the neck of the bottle, until it has reached about body temperature. Use as soon as possible.

Large volume water cleansing enema instructions

- Acquire a 1.5-liter, disposable enema bag. Open the packaging, make sure the flow clamp on the tube is tightly shut and located a few inches up the tube from the nozzle, and fill the bag with body-temperature water.
- Hang the filled bag from a clothes- or towel-hook or other convenient spot about four to five feet above the bathroom floor. The higher the bag the greater the water pressure and speed of filling—if you are new to cleansing enemas, you may want to start with the bag only two or three feet above the ground.
- Place some towels on the bathroom floor near the toilet so you can quickly sit on the toilet and evacuate if you are feeling bowel urgency. It is also possible that small dribbles of water may leak from around the nozzle, and the towels will absorb these.
- Either lie on the towels on your left side (with your left leg straight and your right leg bent toward the chest) or kneel on the towels with your forearms on the floor, the top of your head lightly touching the floor, and the buttocks slightly elevated. Try to find a position you can relax in.
- Reach behind yourself and grab the enema tubing. Make sure the cap is off, revealing the pre-lubricated nozzle. Place the nozzle against the



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anus—briefly clench the anus, then relax, and as you do so, gently slide the nozzle a few inches into the rectum. It won't feel particularly comfortable, but if you feel any pain, stop and re-adjust. You can imagine aiming the tubing towards your belly button.

- After insertion, grip the clamp with one hand and open it. The flow rate can be controlled with this clamp. Keeping a hand on the clamp also prevents the nozzle from being expelled.
- Water will begin flowing into the colon—try to relax enough to allow the entire contents of the bag to enter the colon. If the pressure starts to feel like too much, try closing the clamp for a moment to allow the water to work its way around the obstacle, or closing the clamp partially to allow a slower flow of water. Or, try panting hard, so as to make the abdomen move rapidly in and out, sort of shaking the colon. This last technique is particularly good to get the water past a blockage of intestinal gas.
- You may experience irresistible bowel urgency before the entire contents of the bag have emptied into your colon—if this happens (or after you've emptied the bag and retained the water for up to a few minutes) simply close the flow clamp, remove the tubing, and sit up on the toilet to expel the water.
- Expect an initial outflow of water, followed by smaller evacuations over the next 30-60 minutes.
- Repeat up to twice if desired, for not more than a total of three times.