

Managing DIOS and Constipation

a guide to an effective bowel clean out

What is distal intestinal obstruction syndrome (DIOS)?

Distal intestinal obstruction syndrome (DIOS) is a condition where the small intestine becomes blocked by thickened stool. It only occurs in people with cystic fibrosis (CF). About 15% of people with CF experience DIOS. DIOS occurs because of abnormal and dehydrated mucus in the bowel, undigested fat, and slow movement of stool through the intestines. This causes the stool to become sticky and thick. DIOS is similar to constipation and these processes can occur together. DIOS causes bowel blockage (partial or complete) in the small intestine, while constipation is a gradual accumulation of stool in the large intestine.

What are the symptoms of DIOS?

- Crampy abdominal pain, often worse after eating
- Feeling of fullness
- Fewer bowel movements
- Sometimes loose bowel movements (because only liquid stool can get past the blockage)
- Tenderness in the lower right area of the abdomen
- Vomiting, when the blockage becomes complete

How is DIOS diagnosed?

DIOS is diagnosed on imaging. The easiest test to do is an abdominal X-ray but sometimes a CT scan of the abdomen is used for diagnosis. These tests show the abnormal build-up of stool in the bowel.

When is a bowel clean out required?

When you have distal intestinal obstructive syndrome (DIOS) or are constipated, the thick mucus and stool must be washed out of your bowel using the same prep that is used for a colonoscopy (Peglyte or Golytely or Colyte). Typically, you will need to drink 8 to 12 litres of bowel prep in one day, although some people require more bowel prep. Most people are able to do a bowel clean out at home.

Planning for a bowel clean out:

- You will need a prescription for bowel prep (Peglyte, Golytely, or Colyte) from the CF clinic.
- Start the clean out on a weekend or some other time when you will be home for one to two days.
- Ideally take the entire 8 to 12 litres in the same day. It is best to start early in the day.
- Stay close to a bathroom until you have finished all the bowel prep and the stool has passed.
- Avoid eating a large amount of solid food just before the bowel clean out.

How to drink the bowel prep:

- Mix the bowel prep (e.g. Peglyte) with water as indicated on the product package.
- Use cool, but not very cold, water to prevent feeling chilled during the clean out.
- The bowel clean out is most effective if the bowel prep is consumed quickly. Aim to take the first litre over 30 minutes, then aim to drink 1 cup (250 mL) every 10 to 15 minutes.
- Ideally the bowel prep should be finished the same day.
- Avoid eating solid food during the clean out. Try to consume only clear fluids (e.g. juice, jello, broth, popsicles, sports drinks, black coffee or tea).

Tips to make the bowel prep more palatable:

The bowel prep contain flavoring which many people find unpleasant, especially when large volumes have to be consumed. Tips to make the prep easier to take include:

- Drink the bowel prep mixture through a straw placed far back in your mouth.
- Plug your nose while taking the bowel prep so that you don't notice the taste as much.
- Sip on strongly-flavoured liquids after drinking the mixture, such as sports drinks (e.g. Gatorade/Powerade), soda or juice.
- Suck on a hard candy or lemon after you drink the mixture.
- Rinse your mouth with water or mouthwash after drinking the mixture.

If you cannot drink all of the bowel prep due to nausea or vomiting, you may need to come to hospital to have a tube put through your nose into your stomach. You will get the bowel prep through that tube. Alternatively, the bowel prep may be given by enema.

What to expect after drinking the bowel prep:

- After drinking the first 1 to 2 litres of bowel prep, you will feel the need to have a bowel movement.
- Once your bowels start moving, you will likely have frequent bowel movements with the stool becoming increasingly loose and then watery.
- Your stools should be watery and clear by the end of the treatment.
- You will know the clean out has been effective if your stools look like urine (straw-coloured clear liquid) with no flakes or solid pieces of stool present. You should be able to see the bottom of the toilet when you are done. If the water is cloudy or murky, there is still stool present.
- If you have taken all of the bowel prep prescribed to you and your stools are not watery and clear, you will need to continue to drink bowel prep. Call the CF clinic if you need a prescription for more bowel prep.
- The next morning have another 1 litre of bowel prep. The initial output will be cloudy but should become clear again.
- You will feel very hungry after a clean out!

If you have CF diabetes, you will have to monitor your blood sugar closely during your clean out. You may need to reduce or hold your insulin and you may need to take sweetened liquids as required based on your blood sugar.
Speak with the CF clinic nurse or dietitian for more guidance.

How to maintain clear bowels after a clean out:

- After the clean out is completed, begin taking PEG3350 (e.g. RestoraLAX, Lax-a-Day) daily as instructed by your CF team. PEG3350 is sold over the counter at your local pharmacy, grocery store, Walmart, or Costco. It is flavourless and can be mixed into any liquid.
- PEG3350 works in conjunction with fluid taken around the same time. Mix the PEG3350 in 250 mL (1 cup) of fluid. Within 30 minutes of taking the PEG3350, aim to have an additional 500 mL (2 cups) of fluid. The fluid can be water, tea or coffee, or juice.
- Aim to have 2 to 3 soft, toothpaste-like consistency bowel movements daily.
- Drink lots of fluid. Try to drink a minimum of 2 litres (8 cups) of fluid per day.



Call the CF clinic or go to your local emergency department if you are vomiting or if you experience severe abdominal pain before, during or after the clean out