



CF Nutrition In Bite-Sized Pieces



A Supplement to the CF Center News

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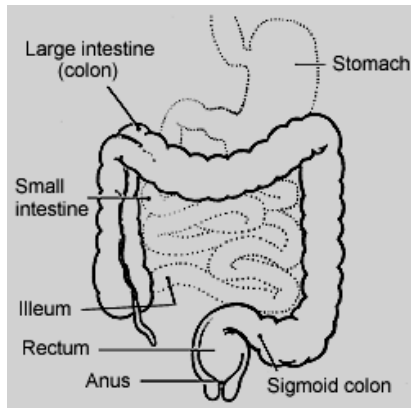
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Chicago, IL

Will It All Work Out In The “End”?!

Let's switch gears in our series of cystic fibrosis (CF) nutrition topics, and go right to the “end” of the food story. What happens to all the nutritious food we eat? After digestion and absorption occur, we have elimination. This final stop in the intestinal tract journey can be a little bumpy for many people. Constipation is very common in the general population and can also occur in CF. In most cases, constipation is successfully treated with laxatives. Distal Intestinal Obstruction Syndrome (DIOS) is specific to people with CF. DIOS is different from constipation. It is important to understand the difference.

About the Intestinal Tract: This organ is truly amazing. Beginning with the mouth, the food you eat is broken into small pieces (chewed). In the stomach, food is mixed with gastric acid and some digestive juices. A valve at the end of the stomach controls the rate that the contents empty into the small intestine (too much too fast can overwhelm the digestive system). The



small intestine is where the bulk of digestion AND absorption occurs. At this point, your meal has been mixed with intestinal secretions including digestive

enzymes and is a liquid. Nutrients are broken down and absorbed into the blood stream in a complex series of chemical reactions.

The small intestine leads to the large intestine, also known as the colon. The colon absorbs water from the liquid mixture, leaving a thicker waste that we call stool. The longer stool stays in the colon, the more water is absorbed. The colon squeezes the contents along in a series of muscle contractions called peristalsis which results in the urge to eliminate.

What is Constipation? In the general population, people may have anywhere from 3 bowel movements (BMs) a week or 3 a day, and this is considered normal. With constipation, the stools are infrequent and usually hard, dry, small and difficult to pass (straining). Passing a tiny amount of stool with straining several times every day still represents constipation. Some triggers for constipation may include: inadequate hydration (hot weather; low fluid intake), travel, low fiber diet or inactivity. Passing a very wide diameter stool suggests *chronic* constipation as the rectum is stretched out by lots of stool being present all the time. A wide stool is painful to pass and can cause a fissure or tear in the anus. Treating chronic constipation is different from treating simple constipation.

Overflow can occur with constipation and is often mistaken for diarrhea. Overflow refers to the leakage of liquid “new” stool around the firm stool in the colon. Diarrhea mixed with pieces of formed stool, alternating formed and liquid BMs, and soiling (accidents) are signs of overflow and constipation.

Distal Intestinal Obstruction Syndrome (DIOS): When it comes to CF, it is important to differentiate between constipation and distal

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intestinal obstruction syndrome (DIOS). Because the intestinal secretions in CF are thicker than normal and some malabsorption may be present, the CF stool can be sticky and bulkier than normal. This sticky stool may not pass easily through the colon. DIOS occurs when more and more stool “gets stuck” in the colon. This is usually accompanied by crampy abdominal pain on the right side. People often report a decrease in the amount of stool passed. The pain gets more intense as more and more stool accumulates. It can lead to a decrease in appetite, fullness and vomiting. DIOS can often be treated without coming to the hospital if it is recognized early enough. Untreated, DIOS can cause a partial or complete blockage in the colon which can be confirmed with an x-ray and may require a “clean out” with special enemas and/or powerful laxatives given through a tube passed through the nose into the stomach done at the hospital. If left untreated or if attempts to clear the blockage are unsuccessful, there is a risk that the bowel could burst (this is extremely rare). In this case, surgery may be necessary.

When to call: Although it’s good to be informed, knowledge about potential problems such as DIOS can sometimes create worry. Don’t panic. It’s not unusual for a person with CF to have occasional stomach aches or a brief change in bowel pattern. Sometimes this can be due to an unusually high fat meal, a GI “bug”, a change in routine or stress. When should you be concerned?

Contact your CF team if you see these signs of DIOS:

- Increasing abdominal pain (especially on the right side)
- A decrease in the normal amount of stool passed
- Decreased appetite, fullness, and vomiting

These are common signs of constipation:

- Persistent straining with bowel movements and/or painful elimination
- Passing very small stools (different from usual), even if frequent
- Hard, dry or wide diameter stools
- Soiling or “accidents”

How is it treated? Your CF team will help determine the cause of the problem. When caught early, *simple*

Contact your CF Nutritionist for more information:

Children’s Memorial Hospital: Megan Hart, MS, RD at 773.880.8166
or Eileen Potter, MS, RD at 773.880.4683

Northwestern Memorial Hospital: Alisa Kirsche, MS, RD at 312.926.7437

Hope Children’s Hospital: Laurie Henneberry, MS, RD at 708.346.5753

constipation is easily managed with oral laxatives such as Lactulose® or Miralax®. *Chronic constipation* or *acute constipation with worsening stomach aches* is usually treated with aggressive laxatives on Day 1 with a slow taper over several days to weeks; sometimes a daily laxative is needed to prevent relapses. *Possible DIOS* may require a trip to the emergency department or the pediatrician for an exam and abdominal x-ray.

The goal of treatment is to clear the colon of the firm stool, then continue taking laxatives to prevent a relapse. Many times, people stop laxatives too soon, underestimating the storage capacity of the colon! Although you will feel better after passing one or more large stools, there is still a lot more to pass. Your CF team will guide you. Except for some babies who might respond to prune juice, dietary treatment of constipation doesn’t work very quickly and laxatives are usually needed. Increasing fiber and fluid intake may be helpful in the long run to help prevent constipation.

Preventing constipation and DIOS:

- Fine tune absorption - Take enzymes as prescribed. Skipping enzymes leads to malabsorption and sticky stools. Take acid suppressors as prescribed – Prevacid®, Prilosec®, Nexium® and Zantac® help your enzymes work their best. Never accept generic enzymes – many generic enzymes do not work well and can cause malabsorption.
- Try to eat and drink well every day. Poor fluid intake can trigger constipation or DIOS.

Preventing simple constipation:

- Fiber in the diet can help regulate bowel patterns. See your nutritionist for ideas.
- For young children prone to constipation - Periodically ask about their bowel habits. If you are suspicious, ask them to call an adult before they flush. Teach them to tell you if they have symptoms of constipation. Ask how they feel about using the bathroom at school - resisting the urge to eliminate (withholding) is common during toilet training, and at school or work. It can trigger constipation or DIOS, or make it worse.
- Encourage a routine for elimination, usually after a meal. The gastrocolic reflex, triggered by food in the stomach, can cause the urge to eliminate.

