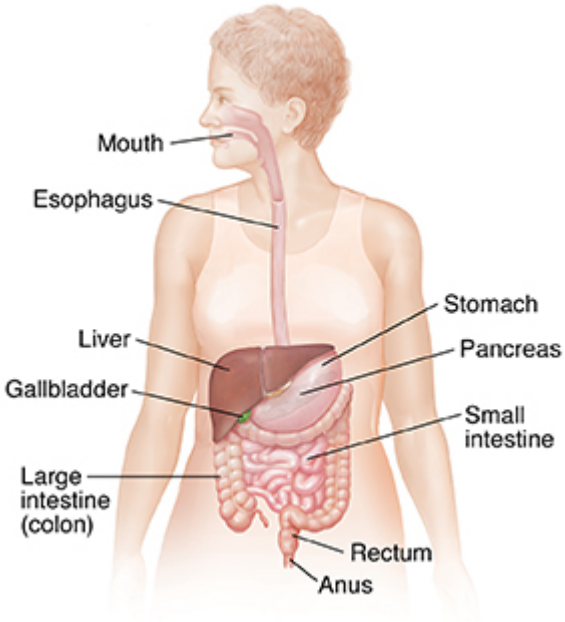
Adult CF: Digestive System Problems

People with cystic fibrosis (CF) have a protein in their cells that doesn't work right. This protein is called the cystic fibrosis transmembrane regulator (CFTR). CFTR controls the flow of water and certain salts in and out of the body's cells. When the amount of salt and water going in and out of cells changes, cellular function becomes abnormal. This affects certain parts of the digestive system. It can cause certain problems in people with CF.

Your digestive system

The digestive system is made up of these parts:

- Mouth. This takes in food, breaks it into pieces, and begins the digestion process.
- Esophagus. This tube moves food from the mouth down to the stomach.
- Stomach. This organ breaks food down into a liquid mixture.
- Liver. This organ makes bile that helps digest fat.
- Gallbladder. This pouch stores bile.
- Pancreas. This organ makes enzymes that break down foods. It also makes insulin, which helps your body use sugar.
- Small intestine. This tube digests food more and absorbs nutrients. What is left is passed on to the colon as liquid waste.
- Large intestine (colon). This tube absorbs water, salt, and minerals from the waste. It forms a solid stool.
- Rectum. This tube stores stool until you have a bowel movement.
- Anus. This opening is where stool leaves the body.



Pancreas problems

CF affects the pancreas. This organ secretes substances that help you digest food. It also controls the body's levels of blood sugar.

The problems in the pancreas can become severe. Some of the hormone cells in the pancreas can be destroyed. This may lead to glucose intolerance and type 1 diabetes. Many people with CF develop diabetes.

If you have CF, the secretions from the pancreas become thick. They then block the ducts within the pancreas. This blockage may cause a drop in how much digestive enzymes the pancreas puts out. As a result, you may have trouble absorbing fats, some proteins, and fat-soluble vitamins A, D, E, and K. Most people with CF don't make enough pancreatic enzymes to digest food normally. This is known as pancreatic insufficiency. You will need to take digestive enzyme supplements when you eat. Talk with your healthcare team about the best kind to take and how to take them.

Most people with CF need to take enzymes before eating every meal and snack. Ask your healthcare team about which foods or drinks don't require enzymes. Use the following tips when taking enzyme supplements:

- Take the capsules with liquid, and swallow them whole. Don't crush the enzymes. If you can't swallow the capsule whole, you can open it and sprinkle the contents onto food, such as applesauce.
- Store the enzymes at room temperature. Don't keep them in the refrigerator or any place that gets too hot (like the car).
- Enzymes can expire. Note the expiration date. Be sure to get a refill before they expire.
- Carry enzymes with you when you are away from home so you can take them when you eat. Don't skip doses.
- If your meal will last longer than 30 minutes, take half of the enzyme dose at the start of the meal and half partway through the meal.
- Never change your enzyme dose on your own. Take them exactly as directed by your healthcare provider.

Talk with your healthcare provider if you have symptoms of malabsorption, such as poor weight gain, belly pain, bloating, excessive gas, or changes in your bowel movements.

Gallbladder problems

Some people with CF have bile that is too thick. It flows too slowly. And it may form stones in the gallbladder. You may need to have your gallbladder removed. This is a common surgery, even in people who don't have CF. You can still digest food without a gallbladder. But gallbladder problems can give you pain and chronic diarrhea with large stools that are greasy and smell strongly.

Acid reflux

The pancreas makes an antacid called bicarbonate. This neutralizes stomach acid during the process of digesting food. In people with CF, the pancreas doesn't make enough bicarbonate. This can lead to excess stomach acid.

People with CF are more likely to have acid reflux. This is also known as gastroesophageal reflux disease (GERD). GERD happens when acid from your stomach moves up into your esophagus or even your mouth. If you have GERD, you may have heartburn, nausea, and problems swallowing. It can also cause coughing and asthma. It may lead you to eat less and lose weight. At night, some stomach acid may go into the lungs. This can cause lung problems. Tell your healthcare provider if you have symptoms of GERD such as:

- Burning pain in your esophagus
- Hiccups or burps that taste bad
- Waking in the night choking or coughing

Your healthcare provider may give you medicine to treat GERD. Some common medicines are proton pump inhibitors (PPIs). These help lower the acid levels in your stomach.

Distal intestinal obstructive syndrome (DIOS)

DIOS is a problem CF can cause in the bowel. CF causes your bowel not to make enough normal mucus. Your bowel may also move more slowly than normal. You may also have undigested food in your gut from problems with your pancreas. These problems can cause dry stool to partly or fully block the bowel. You may have symptoms such as:

- Nausea
- Vomiting with green or yellow bile
- Pain in your lower right belly
- Bloated belly
- Trouble having a bowel movement
- Feeling bloated even after a bowel movement

If you are having problems with constipation, you are at risk for DIOS. Constipation is when you have fewer, smaller, or harder stools that are hard to pass. You may need to take a stool softener or laxative. Talk with your healthcare provider about what to take.

Liver disease

Some people with CF may also end up with liver disease. Symptoms of liver disease are:

- Enlarged liver
- Swollen belly
- Yellow color to the skin (jaundice)
- Vomiting blood