



## CF FACTS – THE DIGESTIVE SYSTEM

### THE GI TRACT

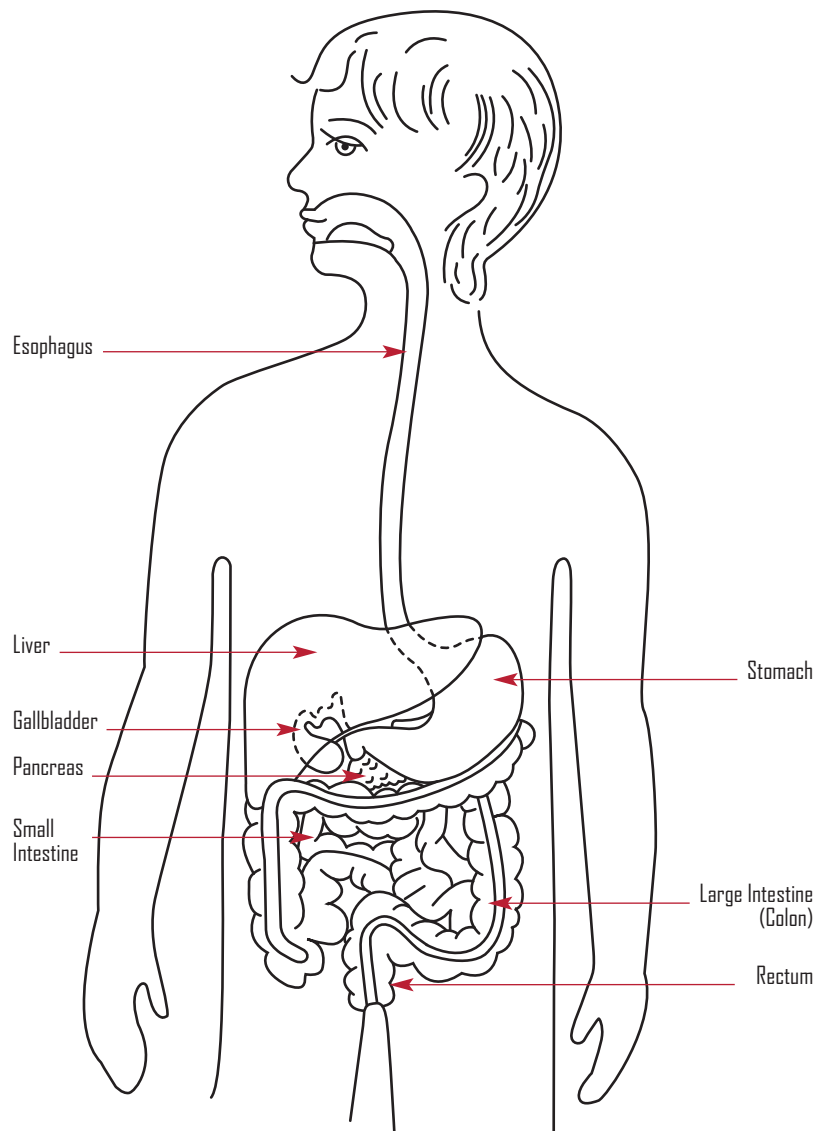
**Digestion\*** takes place in the **gastrointestinal (GI) tract\***. The GI tract is also called the digestive tract. The GI tract is basically a long tube that begins with the mouth and continues through the **esophagus\***, stomach, small, and large **intestines\***. (The small and large intestines together are about 25 feet long!) The GI tract ends at the **rectum\*** and **anus\***.

### THE PANCREAS AND LIVER

Two other organs found in the **abdomen\*** (belly) help with digestion: the **pancreas\*** and the **liver\***. The pancreas is an organ that sits in the upper abdomen behind the stomach. The pancreas produces **enzymes\*** or special proteins that break down **fat\*** and **protein\*** in food. These enzymes include **lipase\***, **protease\***, and **amylase\***. The enzymes pass into

the small intestine through a series of tubes. When there is food in the small intestine, the enzymes help break the food down so it can be absorbed and used by the body. The pancreas also produces **insulin\*** that helps the body use **glucose\***, a sugar that comes from the digestion of **carbohydrates\***. Insulin is released into blood that passes through the pancreas.

The liver is an organ that sits in the upper right side of the abdomen. The **gallbladder\*** is attached to the liver and helps store extra **bile\*** fluid that is made by the liver. The liver and gallbladder are connected to the small intestine by a tube. The liver does many things for the body. Bile fluid is sent from the liver to the small intestine to help with digestion. The liver also helps with digestion of **nutrients\*** in the blood that passes through the liver. The liver helps break down certain medicines in the blood and is a filter that helps clean the blood. The liver stores some nutrients for later use. Like the lungs, the liver has a lot of reserve function but it can fail if it is very damaged.



### THE GASTROINTESTINAL (GI) TRACT

\*See CF Words to Know Glossary.



### THE STEPS IN DIGESTION

When food is swallowed it passes through the esophagus to the stomach. In the stomach, it mixes with stomach or **gastric fluid**.\* Stomach fluid is made up of special acids that help break down food. The stomach is a muscle that also churns the food to help it mix with the stomach acid and break down into smaller pieces.

The food then passes into the small intestine. Most digestion takes place in the small intestine. The liver sends bile fluid to the small intestine to help with digestion. The pancreas sends special proteins called enzymes to digest fat and protein nutrients. The small intestine itself has enzymes that can break down some sugars and other nutrients. The small intestine breaks food down into small particles and chemicals that can be used by the body.

**Absorption**\* is the other important thing that happens in the intestines, especially in the small intestine. When food is

digested it is broken down into water and tiny particles. These nutrients are the **calories**\* of energy and materials the body's cells need to function. Nutrients pass through the lining of the small intestine into the bloodstream. This is called absorption. Nutrients are carried in the blood to all the cells of the body. They are used to keep the body's cells running well. They are also used to repair cells and for growth.

Undigested food travels on to the large intestine. Some water is absorbed in the large intestine or **colon**.\* **Bacteria**\* in the large intestine help break down the food as well. These good bacteria live in the intestines all the time and help digest food.

The leftover waste that cannot be used by the body makes up a **bowel movement**\* or stool. The intestines have muscles that help squeeze and move the bowel movement down the tube until it passes out of the body through the rectum and anus.