Welcome to this lesson today on the stomach. Today we will be discussing the structure and function of the stomach, and the stomach’s role in digestion. So the three main functions of the stomach that we’re going to discuss today are that it stores food, it chemically breaks down food, and it mechanically breaks down food. So before we describe these a little bit further, I’m going to draw a picture of the stomach here that we’re going to use as a reference as we discuss the structure and function. So this is our diagram of the stomach.

So as I mentioned, one of the functions of the stomach is to store food. So food will enter the stomach through the esophagus. And remember, the esophagus is the tube that connects your mouth and your throat to your stomach. So it carries food down to your stomach after it's been chewed and swallowed.

So food will enter the stomach through the esophagus. And then the stomach will help to chemically and mechanically break down food. And then it will also let food into the small intestine. So it's able to control the amount of food that enters the small intestine. And this allows so that food isn't passed along faster than it can be processed.

So we actually have these sphincters associated with our stomach. And these sphincters are circular muscles that will open and close and allow food to enter or exit the stomach. So we have one sphincter here and one sphincter here.

So the first sphincter here between the esophagus and the stomach allows food to enter from the esophagus and into the stomach, but also helps prevent chyme from backing up in the esophagus. Now sometimes if the sphincter isn’t working properly chyme will back up into the esophagus and cause what is commonly known as heartburn. But generally the sphincter allows for the flow of food from the esophagus into the stomach, but not the other way around.

And then the other sphincter that we have here allows for the passage of food from the stomach to the small intestine. And as I mentioned, this sphincter well help the stomach control how much food is passed along at a time so that not too much is passed through at a time where it can't be processed efficiently.

So the stomach also works to chemically break down food. So what this means is that it uses chemicals in order to help break down the food. So some of these chemicals include enzymes, such as pepsins. Pepsins are enzymes that are found in the stomach. They're digestive enzymes of the stomach that help break down the proteins in the stomach.

And then we also have gastric juices, sometimes just commonly known as stomach acid, which is this highly acidic
fluid in your stomach that's made of hydrochloric acid, mucus, enzymes, water, and a few other substances that helps break down food and kill microbes. So enzymes and gastric juices work together to help chemically break down the foods that you're eating before they're passed on to the small intestine.

Mechanically breaking down food means that it's physically breaking down the food. It's not using chemicals to break it down. But it's physically breaking it down. So an example would be stomach contractions. So your stomach will contract. And basically, as it contracts, it's mashing up all of the food that's in there and helping to break it down into this paste-like fluid.

So chyme is a pasty substance that's formed when the stomach contractions and the gastric juices together mix food up and break it down. So chyme, as I mentioned, is that substance that's formed in the stomach. As you ingest food, it's going to mix with those gastric juices and those enzymes. Your stomach is going to contract. And it's going to kind of mash all that stuff up together and produce this pasty substance called chyme. So it's basically just a mashed-up version of the food you ate mixed with gastric juices.

So let's look back here at this diagram right here. So as I mentioned, food will go down the esophagus and into the stomach. In the stomach, gastric juices and pepsins will help chemically break down the food. The stomach will contract to mechanically break it down. And then we have chyme that's formed from there.

And then peristalsis, which is these wave-like contractions, will push the food towards this sphincter. And then the sphincter will open and allow a little bit of food at a time to pass into the small intestine. And from there, it'll move through the small intestine and the nutrients will be absorbed.

So this lesson has been an overview on the structure and function of the stomach.