

How Many Stomachs Does It Take?

Different animals have specialized internal and external structures that help them survive in specific environments. External structures are found on the outside the body. Internal structures are found inside the body.

Think about the structures of the human digestive system. You take in food through the mouth, where digestion starts. It passes down the esophagus and into the stomach, where it is mixed with digestive liquids. The food then moves through the intestines, where nutrients are absorbed into the body. But not all animals have such a straightforward digestive path. Take cows, for example. Did you know that cows have more than one stomach? In fact, they have four! These stomachs allow a cow's digestive system to break down the tough food it eats.

Here's how a cow's digestive system works. As with humans, digestion starts in a cow's mouth, where food is briefly chewed into small pieces. When swallowed, the food moves to the cow's first stomach, where it begins to be broken down by digestive juices. The first stomach has large muscles to break the food into pieces. Once the first stomach makes the food pieces small enough, they can move into the second stomach. Sometimes the food pieces are too large for the first stomach to break apart; when this happens, the food is pushed back into the mouth. Have you heard the expression "chewing the cud"? This is when a cow rechews its food and swallows it again. This can happen several times until the pieces are small enough to move into the second stomach. In the second stomach, bacteria break food down into even smaller pieces. The third stomach filters the food and

stores it until the fourth stomach has enough space. In the fourth stomach, more digestive juices continue the breakdown of food into particles. Finally, the food moves to the small intestine, where nutrients, or energy, can be absorbed for the cow to perform its daily tasks. It takes one to three days for this entire process, depending on what a cow eats.

The next time you see a cow, think about how amazing its internal structures are.

Questions

1. What is the importance of the digestive system? What would happen if animals didn't have this system?
2. What does "chewing the cud" mean?
3. Other animals have multiple stomachs. Make a prediction about what other animals might benefit from having many stomachs. Explain your answer.



Credit: prochasson frederic/Shutterstock.com