



Curiosity Guide #204

Digestive System

Accompanies Curious Crew, Season 2, Episode 4 (#204)

Slurry in the Stomach: Making Chyme

Investigation #4

Description

Find out how the stomach breaks down a meal of crackers and cottage cheese—or anything else!

Materials per Person

- 2 Ziploc baggies
- 2 Saltine crackers
- 4 Tablespoons cottage cheese
- 1 Tablespoon water
- 1.5 ounces orange juice
- Shallow tray
- Small containers for ingredients

Procedure

- 1) Do the following steps over a shallow tray in case of leaking.
- 2) Place one baggie inside the other. This is your stomach. The inside baggie stands for the mucus lining that we have in our stomachs. If we didn't have a mucus lining, our stomachs might leak during the churning process.
- 3) Place the cracker and cottage cheese inside the double bag.
- 4) Add water to simulate saliva.
- 5) Pour in the orange juice to simulate gastric acid.
- 6) Squeeze out as much air as possible. Close both baggies.

- 7) Squeeze the food inside the bag. You are simulating the muscles of your stomach that churn and squeeze the food.
- 8) What do you observe?

My Results

Explanation

The stomach is a j-shaped hollow organ about the size of a person's fist. Once food enters the stomach, the muscles churn and squeeze the food. The stomach lining mixes in gastric acid and enzymes to help break down the food into a mush called chyme. The gastric acid in the stomach contains hydrochloric acid. This makes the stomach an acidic space with a pH level of 1.5. The chyme is gradually released into the small intestine. Interestingly, most of the digestion actually takes place in the small intestine and not in the stomach.

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