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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