



Curiosity Guide #204

Digestive System

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

The Intestinal Squeeze

Investigation #6

Description

Use the slurry, or chyme, that you made in Investigation #4 to find out more about how digestion works.

Materials per Group

- Chyme from Investigation #4, a mixture of crackers, cottage cheese, water, and orange juice
- 1 to 2 nylon stockings, cut into tubes
- Shallow pan
- Tray
- Paper towels
- Rubber gloves

Additional Materials

- 20-foot length of yarn, rope, or hose
- 5-foot length of thicker hemp or rope

Procedure

- 1) Put on gloves.
- 2) Place the nylons in the shallow pan.
- 3) Carefully pour the "chyme" into the stocking. Notice that the "nutrients" are leaking through the porous mesh and into the pan. This leaking simulates the small intestine pulling out the nutrients from the food.

- 4) Squeeze the slurry along, into another nylon. This represents how the chyme moves from the small intestine to the large intestine.
- 5) Lay out lengths of paper towels on the shallow tray.
- 6) Place the nylon on the bed of paper towels and wrap the nylon.
- 7) Gently pat and squeeze the nylon to soak up the remaining liquids onto the paper towels. This represents the large intestine squeezing out water from the chyme.
- 8) The chyme that is left is fibrous and is called stool. This stool will then pass along the large intestine as waste to leave the body.
- 9) **Something else to try:** Describe the movement of the chyme through the 20-foot long small intestine into the 5-foot long large intestine.

My Observations

Explanation

From the stomach, the food enters the small intestine, a 20-foot long, 1-inch diameter tube that pulls out the nutrients from the food we eat. The small intestine is alkaline in nature. It uses bile and other enzymes to extract the nutrients from the food, or chyme.

The chyme then enters the large intestine, which is 5 feet long and about 3 inches in diameter. The large intestine, also known as the colon, squeezes out any remaining water from the chyme. This water is absorbed into the body to prevent dehydration. The large intestine also releases vitamins from the chyme. The large intestine produces carbon dioxide and methane gases, which are passed as flatulence.

The remaining stool, a waste product from chyme that has little water and nutrients, is passed into the rectum. This action stimulates the nerves there and signals the brain that it is time to defecate.

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