Swallowing

Overview: Peristalsis is the wavelike movement of muscles that move food through your gastrointestinal tract. The process of digestion begins with chewing and mixing the food with saliva. When you swallow, the epiglottis closes up to keep food from going into your respiratory system and the hunk of chewed food (called bolus) goes into your esophagus – this is the tube that runs from your mouth to your stomach. Since the esophagus is so skinny, the muscles along it must expand and contract in order to move food down. In this activity we will examine that process.

Materials

- several different balls the size of a tennis ball or smaller (and including a tennis ball)
- pair of old nylon stockings
- scissors

Experiment

1. Cut away the control top portion of the nylons and remove the toe part as well (have an adult help you, if needed). You should now have a long piece of nylon.
2. Put the tennis ball in one end of the nylon "esophagus."
3. Start using both hands to move the ball down the nylon tube until it arrives at the other end.

Swallowing Data Table

Item/Object	**How Long Did It Take to Make It Through the GI Tract?** *(measure in seconds)*

Reading

The esophagus is lined with muscles that work in waves, expanding and contracting to move food along it down into the stomach. These are very strong muscles: even if you ate upside down they would work!

In the grand scheme of the digestion process, the role of the esophagus is important, but relatively short. It takes about 10 seconds to move food from the mouth to the stomach, but the entire process of digestion can take up to 2 and a half days to finish!

Exercises

1. What is the tube called that connects the mouth and stomach?
2. What is the process called that moves food along the digestive tract and how does it work?
3. How long is food in the esophagus?

Answers to Exercises: Swallowing

1. What is the tube called that connects the mouth and stomach? (esophagus)
2. What is the process called that moves food along the digestive tract and how does it work? (peristalsis occurs when smooth muscles along the digestive tract expand and contract to move food)
3. How long is food in the esophagus? (only a few seconds)