

## **TRY DRINKING WHILE STANDING ON YOUR HEAD**

**A. Question:** *Is it possible to drink something while upside down?*

**B. Materials Needed:**

- A glass of drinking water or juice
- A bent drinking straw or flexible tube

**C: Procedure:**

1. Try to stand on your head against the wall. If this is not possible, bend from your waist down until your head touches the floor.
2. Have your partner bring you a glass of water with the drinking straw inserted. Your partner should help place the straw in your mouth.
3. Suck through the straw while your body (or upper body) is upside down. Drink as much as desired.

**D: Anticipated Results:**

Students will see that it is possible to drink fluids while upside down.

**E: Thought Questions for Class Discussion:**

1. Is gravity needed to make fluids come down the esophagus?
2. Can we drink water while we stand on our head?
3. How does food go down the esophagus into the stomach?
4. Is the esophagus like a glass or rubber tube going in the stomach?
5. Why did the fluid not flow out of the mouth when drinking upside down?
6. What is the muscle action called, which pushes food into the stomach?

**F: Explanation:**

After food is swallowed, it enters the esophagus. Here it is pushed along by muscle action, which is called peristalsis. This movement of the food is carried out by involuntary muscles. There are two layers of muscles: the inner layer forms a series of circles around the tube, and the outer layer is longitudinal. When the inner layer contracts, the tube becomes smaller at that point. When they relax the longitudinal muscles contract. This alternate contraction and relaxation of the two sets of muscles push the food along the tube in peristaltic waves. This is the reason why food, whether it is in solid or liquid form, may be swallowed with the body positioned in any direction. Gravity has little or no influence on this.