



## **Anatomy and Physiology of Swallowing**

### **Background**

Swallowing is a very complex activity that is seldom appreciated until it doesn't work correctly. It plays an important role not only in obtaining nutrition for the body, but also serves to help protect your lungs from aspiration of food and liquid, and allows you to participate in important social activities like eating.

### **Anatomy**

Normal swallowing begins at the lips and then continues through the back of your throat and ultimately down to the stomach. Important anatomy that must function properly includes the teeth and tongue, salivary glands (spit glands), soft palate, larynx (voice box), trachea (wind pipe), and esophagus (swallowing tube). When any of these features are missing or malfunctioning, it can lead to difficulty swallowing, drooling, choking, or aspiration pneumonias.

### **Physiology**

In general, swallowing begins when food enters the mouth. Solids foods must be chewed in order to make it small enough to be swallowed. Saliva helps to lubricate solid foods. Once the food is chewed and a swallow is initiated, the food enters the pharynx (the lower throat). This requires your soft palate to close against the back wall of your throat or otherwise you may have liquids most commonly come through the nose. During this time, you hold your breath involuntarily. The larynx (voice box) then moves up and forward to open up the top of your esophagus (swallowing tube). This is the time that the epiglottis (flapper) inverts to help protect your airway. Your throat muscles then squeeze like a toothpaste tube from top to bottom to push food into your esophagus and down to your stomach.

If you choke or cough while eating, it can be because food went into the airway where it's not supposed to be. This can increase your chances of aspiration pneumonia. This is more likely to happen with liquids because they move faster than solid foods. Any swallowing difficulty should be evaluated by an otolaryngologist.