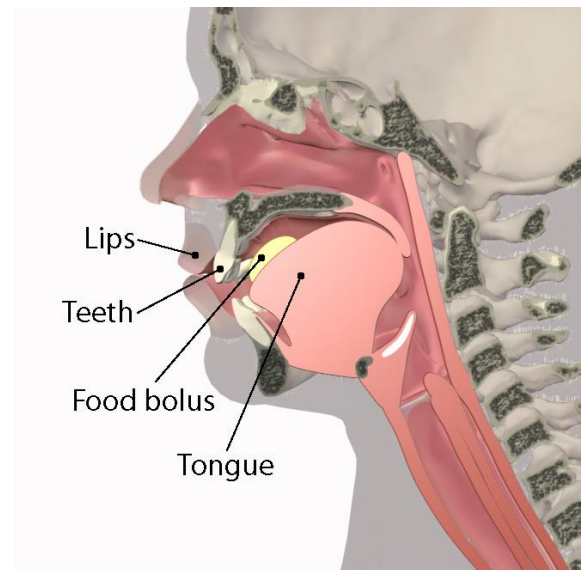




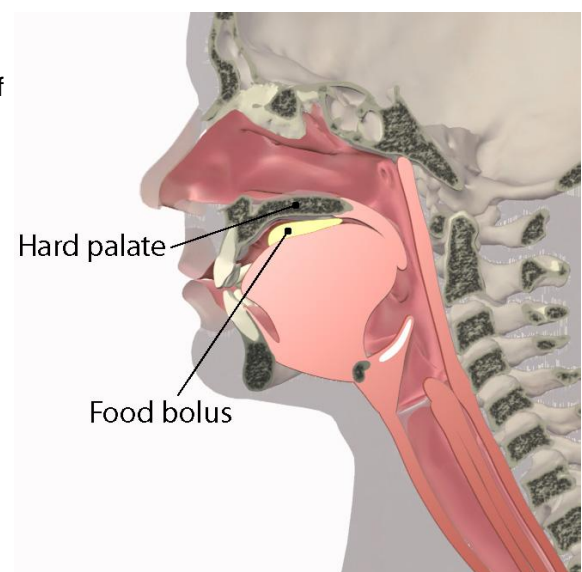
What happens when we swallow?

Swallowing is divided into four stages:

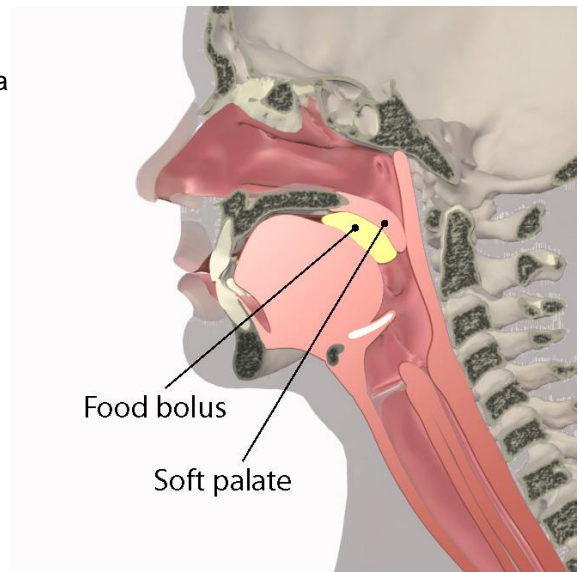
Stage 1: Food or liquid is placed in the mouth, on the tongue. The lips then close, and food is chewed, mixed with saliva, and brought together by the tongue to form a single bolus.



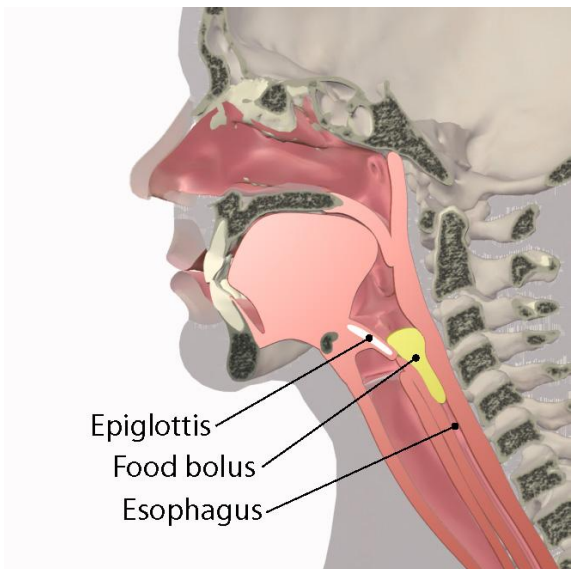
Stage 2: With lips firmly sealed, the tongue then pushes the food bolus up and back against the hard palate (roof of the mouth). In the case of liquid, this is also propelled to the back of the mouth by the tongue.



Stage 3: The soft palate (soft part of the roof of the mouth) then closes, preventing food or liquid from entering the nasal cavity (back of the nose). As food and liquid passes from the tonsil area and base of the tongue, it is propelled into the pharynx (throat). The vocal folds close, breath is held momentarily and the larynx (voice box) elevates and moves forward to prevent food and liquid entering the lungs. At the same time, muscles squeeze food through the throat and a sphincter opens to allow food to pass into the esophagus (food tube).



Stage 4: Food and liquid is transported through the esophagus into the stomach.



How does Head and Neck Cancer cause problems with swallowing?

Changes in swallowing can be caused by many factors, including:

- size of tumor
- location of tumor
- effects of cancer treatment (treatments for head and neck cancer include surgery, radiotherapy and chemotherapy)

- **Lip cancers** may result in food and liquid spilling from your mouth.
- **Tongue cancers** may result in difficulty bringing food together and pushing it to the back of your mouth.
- **Radiotherapy** sometimes reduces the amount of saliva in the mouth. Saliva helps bring food and liquid together, therefore this may become harder during radiotherapy treatment. You may also experience changes in taste and painful swallow during radiation and/or chemotherapy.
- **Jaw cancer** may result in difficulty chewing some solid foods.
- **Cancer of the tongue base or tonsil** can cause food and liquid to move into your pharynx (throat) either too quickly or too slowly.
- **Pharyngeal cancer** (cancer of the walls of the throat) may slow down swallowing, and repeat swallows may be required to pass food into your esophagus (food tube).
- **Laryngeal cancer** may result in the entrance to your lungs not being closed off during swallowing. This may be due to a restriction in elevation and forward movement of your larynx (voice box) or because your vocal cords cannot fully close.

How are swallowing problems treated?

Swallowing rehabilitation may include:

- Exercises to strengthen muscles for swallowing.
- Postural changes such as tucking your chin down towards your chest.
- Learning to use special techniques such as holding your breath when swallowing.
- Sitting upright at a 90 degree angle, taking small amounts, eating slowly and alternating liquid with food can improve swallow safety.
- Dietary changes may be recommended, including thickening drinks or choosing pureed or soft foods to keep swallow safe and prevent food or liquid entering your lungs.