Salivary glands release their secretions into ducts that lead to the mouth. There are three main pairs: the parotid glands, the submandibular glands and the sublingual glands. There are also numerous smaller salivary glands scattered around the mouth.

Parotid glands

These are situated one on each side of the face just below the external acoustic meatus . Each gland has a *parotid duct* opening into the mouth at the level of the second upper molar tooth.

Submandibular glands

These lie one on each side of the face under the angle of the jaw. The two *submandibular ducts* open on the floor of the mouth, one on each side of the frenulum of the tongue.

Sublingual glands

These glands lie under the mucous membrane of the floor of the mouth in front of the submandibular glands. They have numerous small ducts that open into the floor of the mouth.

Composition of saliva

Saliva is the combined secretions from the salivary glands and the small mucus-secreting glands of the oral mucosa. About 1.5 litres of saliva is produced daily and it consists of:

water
mineral salts
a digestive enzyme: salivary amylase
mucus
lysozyme
immunoglobulins
blood-clotting factors.

Functions of saliva

Chemical digestion of polysaccharides

Saliva contains the enzyme *amylase* that begins the breakdown of complex sugars, including starches, reducing them to the disaccharide maltose. The optimum pH for the action of salivary amylase is 6.8 (slightly acid). Salivary pH ranges from 5.8 to 7.4 depending on the rate

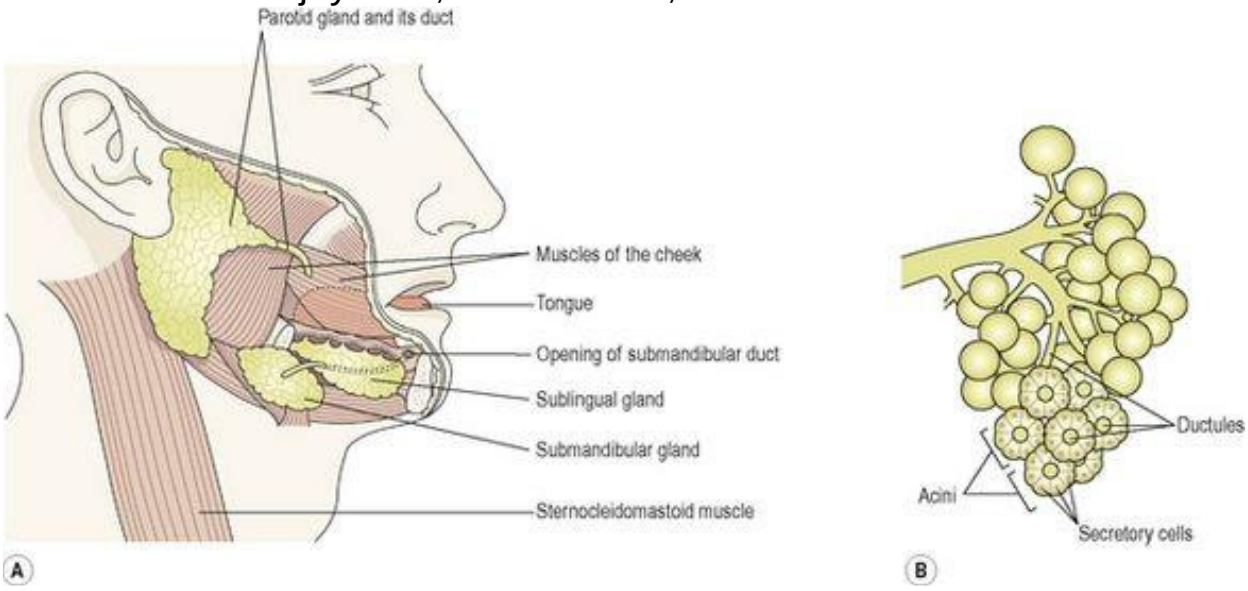
of flow; the higher the flow rate, the higher is the pH. Enzyme action continues during swallowing until terminated by the strongly acidic pH (1.5 to 1.8) of the gastric juices, which degrades the amylase.

Lubrication of food
The high water content means that dry food entering the mouth is moistened and lubricated by saliva before it can be made into a *bolus* ready for swallowing.

Cleaning and lubricating the mouth
An adequate flow of saliva is necessary to clean the mouth, and to keep it soft, moist and pliable. It helps to prevent damage to the mucous membrane by rough or abrasive food.

Non-specific defence
Lysozyme, immunoglobulins and clotting factors present in saliva combat invading microbes.

Taste
The taste buds are stimulated only by chemical substances in solution and therefore dry foods only stimulate the sense of taste after thorough mixing with saliva. The senses of taste and smell are closely linked and involved in the enjoyment, or otherwise, of food .



A.The position of the salivary glands. **B.** Enlargement of part of a gland.