

3. What is saliva? Write the mechanism of salivary secretion.

Saliva is the secretory product of salivary gland. It secretes into the ducts from the secretory granules of the gland. About 1.5 lit of saliva is secreted per day with a pH of about 7.

Saliva contains Na^+ , K^+ , Cl^- and HCO_3^- ions at a concentration close to plasma. It contains two digestive enzymes; salivary amylase and lingual lipase. Salivary gland also secretes IGA.

Saliva performs a number of important functions. It helps swallowing, keep the mouth moist, serves as a solvent to stimulate taste buds, help the movement of the lips ~~down~~ & tongue during speech and keep the mouth and teeth clean.

Mechanism of salivary secretion:-

Though there are some excretory product in saliva but salivary secretion is a secretory phenomenon. On the basis of different evidences like -

- i) saliva is very useful.
- ii) On the basis of histological and electrical changes of the gland.
- iii) Active work done by the gland during secretion.

Salivary secretion is under the neural control.

Total mechanism of salivary secretion is depend on salivary centre in the reticular formation of the medulla. Two centres are -

- i) Superior salivary nucleus
- ii) Inferior salivary nucleus

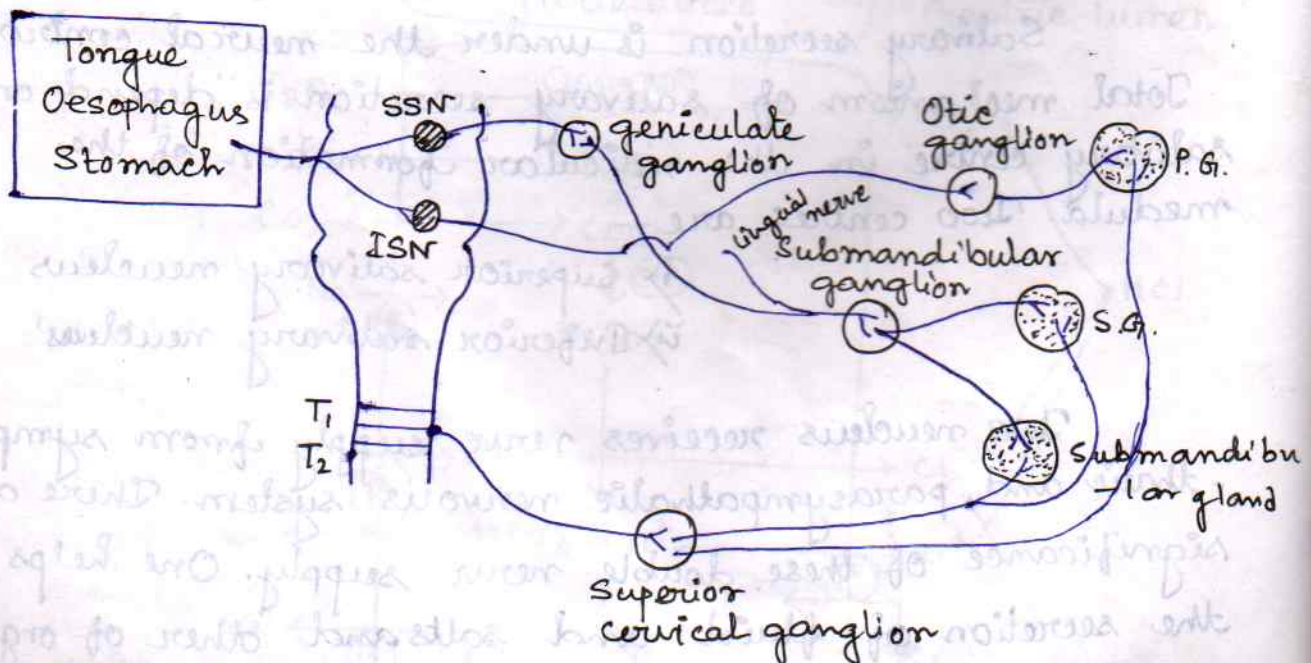
Two nucleus receives nerve supply from sympathetic and parasympathetic nervous system. There are significance of these double nerve supply. One helps in the secretion of fluid and salts and other of organic materials. On the other hand one cause vaso-constriction and vaso-dilation. By the help of two this

nerve salivation is a reflex phenomenon. No chemical stimulation is involved with it. There are two types of reflex is involved in salivation. ~~conditio~~

- a) ~~conditioned~~ reflex
- b) ~~unconditioned~~ reflex

From the superior salivary nucleus parasympathetic fibre go to sub-mandibular and sub-lingual glands. Through geniculate ^(maxillary) ganglion it came down through facial nerve to sub-mandibular ganglion. In the cavity of mouth, it meets with lingual nerve. At last, the fibre ends into sub-mandibular and sub-lingual gland. From inferior salivary nucleus parasympathetic fibre go to Otic ganglion. At last, post ganglionic fibre end into parotid gland.

From first and second thoracic segment of the spinal cord sympathetic fibre go to superior cervical ganglion. Post-ganglionic fibres ~~in~~ innervate three salivary glands. Acetyl-choline is the main neurotransmitters of the neural control of salivary secretion.



SSN → Superior salivary nucleus
 ISN → Inferior salivary nucleus.