

Digestive system of Man

Digestive system of man includes alimentary canal and associated glands. The total length of human alimentary canal is about 30 feet and has the regions like buccal cavity, oesophagus, stomach, small intestine and large intestine.

1. **Buccal cavity** has tongue and teeth. On the surface of the tongue, there are numerous Lingual papillae, which contain taste buds.
2. **Three forms of papillae** are present in man. These are Filiform, Fungi form and Circumvallate. Filiform papillae are located at the center of the tongue and lack taste buds. Fungi form papillae contain few taste buds and are present at the tip of the tongue.
3. **Circumvallate papillae** carry numerous taste buds. Foliate papillae are absent in man but present in other mammals.
4. **Tongue** can detect the taste of food. Sweet taste is detected at the tip of the tongue. Salt taste (tip and sides), Sour (posterior side), Bitter (base of tongue) etc can also be detected by the taste buds.
5. Arrangement of teeth on the jaws is called **Dentition**.
6. **Human dentition** is Thecodont, Heterodont and Diphyodont.
7. The dental formula of adult man is **2123 / 2123** and that of the Milk dentition is **2102 / 2102**.
8. **Dentine** represents the skeleton of tooth, which is secreted by the Odontoblast cells.
9. Tooth is covered by **Enamel** secreted by the **Ameloblast** cells.
10. Enamel is the **hardest part** of the body. The pulp cavity of tooth contains nerves and blood vessels. The teeth are kept in the sockets of the jawbone and are fixed by the Cement.
11. Buccal cavity is followed by the Pharynx. It opens into the Oesophagus through Gullet and to the larynx through Glottis.
12. **Epiglottis** is a cartilaginous flap hanging from the roof of the pharynx to close the glottis while swallowing.
13. **Oesophagus** is a narrow tube without digestive glands. It allows the passage of food into the stomach through Peristalsis.
14. Stomach is the widest organ of the alimentary canal. It is divisible into four parts namely **Cardiac** part, **Fundus**, **Body** and **Pyloric** part. Cardiac part is the large anterior portion.
15. A **cardiac sphincter** is present at the opening of the esophagus into stomach, which prevents the backward passage of food into esophagus. Pyloric stomach opens into duodenum.
16. A **Pyloric sphincter** is present at the opening of pyloric stomach into duodenum. It regulates the passage of food into the duodenum.
17. Intestine is divisible into small intestine and large intestine.

18. Small intestine is long and remains coiled in the abdomen. It contains circular folds called **Valves of Kerkrings** and **Villi**. Small intestine has three parts namely Duodenum, Jejunum and Ileum. **Duodenum** is short and C shaped into which bile duct and pancreatic duct opens.
19. The opening of pancreatic duct into duodenum is guarded by a valve called **Sphincter of Oddi**. Jejunum is thicker and is followed by the ileum.
20. **Ileum** is the longest part and its distal end is dilated to form the **Sacculus rotundus**.
21. **Villi** are small finger shaped structures projecting into the lumen of the intestine.
22. Villi are vascularised and increase the surface area for absorption.
23. **Lacteals** are the lymph vessels present in villi, which absorbs fatty substances. Cells lining the villi have microvilli, which further increase the area of absorption.
24. Small intestine also has **Payers patches** on the submucosa of the ileum. These are lymphoid structures involved in the production of B-lymphocytes.
25. **Paneth cells** of small intestine secrete Lysozyme, a bactericidal enzyme.
26. Large intestine is divisible into Caecum, Colon, and Rectum.
27. **Caecum** is a pouch present between ileum and colon. Caecum bears a lymphoid organ called Vermiform appendix. Its inflammation leads to Appendicitis.
28. **Colon** has four parts namely ascending colon (absorbs fluids and salts), transverse colon (absorbs water), descending colon and pelvic colon. Pelvic colon conserves water and minerals.
29. **Rectum** is the last part of the alimentary canal and is wider than colon and has many longitudinal folds.