**NAME:** GBADAMOSI LATIFAH TEMIDAYO

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**QUESTION**

In a tabular form only, compare and contrast sections of the Gastrointestinal tract.

**ANSWER**

**DIFFERENCES OF THE GASTROINTESTINAL TRACT LAYERS.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **SEROSA** | **MUSCULARIS** | **SUB MUCOSA** | **MUCOSA** |
| **ORAL CAVITY** | The outermost layer. No hair follicles or sweat glands present. | The **muscularis** mucosa is thick and, in some areas, it consists of 3 **layers** of smooth muscle, although this layering is not always visible. | Submucosa has dense collagenous fibrous tissue. | Lined with stratified squamous epithelium, keratinized.  Lamina propria contains loose connective tissue, mucous glands, serous minor salivary type glands. |
| **OESOPHAGUS** | The one-third distal part from the stomach of the oesophagus is lined with skeletal muscle. The proximal two-third part is lined by smooth muscle. | The distal end consists of only smooth muscles. The mid portion consists of a mixture of both striated and smooth muscle cells. The proximal end consists of only striated muscle. | Rich in smooth muscles. | Non keratinized stratified epithelium. |
| **STOMACH** | A thin serous membrane made of simple squamous epithelial tissue and areolar connective tissue. The **serosa** has a smooth, slippery surface and secretes a thin, watery secretion known as serous fluid. | It has 3 layers of smooth muscles   * Oblique * Longitudinal (outer) * Circular (inner). | Contains loose connective tissue, blood vessels and plexuses. | Simple columnar epithelium. Consists of gastric folds and glands. The glands are secreted by 5 cells:   * Parietal cell * Chief cells * Mucous secreting cells * Oxyntic cell * Zymogenic cells. |
| **SMALL INTESTINE** | Adventitia in duodenum. It consists of a thin layer of cells that secrete serous fluid, and a thin layer of connective tissue. | The muscularis mucosa has 2 layers and extends into the intestinal villi where smooth muscles form a longitudinal bundle in the centre of the villi. | Presence of intestinal glands called mucosa glands or Brunner’s glands in the duodenum. There are no glands in the jejunum. | Simple columnar epithelium. Also contains intestinal glands, microvilli. |
| **LARGE INTESTINE** | The **serosa** is a thin layer of simple squamous epithelial tissue made up of loose connective tissue that secretes watery serous fluid to lubricate the surface of the **large intestine**. | The inner circular layer forms the sheath around the large intestine, but the outer longitudinal layer forms 3 flattened strands called the Taenia coli. | Considerable amount of fat may be found in the submucosa. | Crypts of Lieberkuhn are present.  There is only little lamina propria formed in between the glands. |
| **APPENDIX** | Its exterior layer is longitudinal and derived from the taenia coli. | No taenia coli here. Goblet cells are rare or absent. The epithelium appears low columnar. The muscle layer is circular | Often fatty tissue here. Sub mucosa  contains lymphoepithelial tissue also. | Presence of abundant lymphocytes and lymphoid follicles. Also contains few glandular elements and neuroendocrine argentaffin cells. |
| **ANAL CANAL** | The **anal canal** represents a transition from features of the lower tract to those of skin.  Its outer layer is adventitia. | The surface is a simple columnar epithelium with goblet cells. Also, presence of skeletal muscles. | The connective tissue of submucosa changes to the dense fibrous tissue of dermis.  This connective tissue contains both ordinary eccrine sweat glands and much larger **apocrine sweat glands**. | Mucosa is lined by non-keratinized stratified squamous epithelium. |

**SIMILARILIES OF THE GASTROINTESTINAL TRACT**

The layers of the GIT are the same all through:

1. Serosa: it is the outermost layer of the GIT also known as the Tunica Adventitia
2. Muscularis: it is made up of muscularis externa and muscularis interna. It is made of smooth muscles. The 2 sublayers are: -outer longitudinal and inner circular.
3. Submucosa: it is directly above the mucosa. Blood vessels, lymphatics/ lymph nodes, loose connective tissues, nerves, glands are found there.
4. Mucosa: the epithelium lining on the muscle is mucosa or mucous membrane. It has lamina propria and muscularis mucosa.

Note: The epithelium tells you where you are in the GIT. Submucosa and mucosa changes along the GIT. This can also be used to identify the part of the GIT in histology.