**16/MHS06/065**

**MLS 408 ASSIGNMENT**

**HISTOPATHOLOGY TECHNIQUES AND MUSEUM**

**QUESTION**

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

ANSWER

The GIT consist of the digestive system beginning with the Oral cavity, esophagus, stomach, small intestine, large intestine, anal canal and the accessory organs (salivary glands, liver, pancreas.)

The basic structure of the Gastrointestinal tract is comprised of 4 major layers namely;

* Serosa/tunica adventitia layer- which is the outermost layer
* Muscularis externa/lamina propria- made up majorly of muscles
* Submucosa layer- made up of connective tissue, blood vessel, nerves.
* Mucosa layer- consists of epithelium lying on the muscularis mucosa

The basic structure of the GIT varies in each part/section due to the function the part performs.

CONTRASTION OF THE GIT SECTIONS

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| --- | --- | --- | --- | --- |
| **Part of the GI Tract** | **Type of epithelium** | **Main cell types of epithelium** | **Muscularis layer/ submucosa layer** | **Function** |
| Oral cavity | Stratified squamous cell (non-keratinized) | * Squamous cell * Serous cell * Mucous cell | Transitions from striated to smooth muscles | * Mastication of food particles * Digestion of carbohydrates begins * Breathing and speaking |
| Esophagus | Stratified squamous (non-keratinized) | Squamous cell | Distal one-third lined by skeletal muscle and the proximal two-third is lined by smooth muscle with respect to the stomach. | Aids in the transportation of food (bolus) into the stomach. |
| Stomach | Simple columnar epithelium | Surface mucous cells  Chief cells  Neck mucous cells  Parietal cells | Longitudinal, circular and oblique smooth muscles | Temporary storage of food  Helps in the further digestion/ breakdown of carbohydrate and protein. |
| Small intestine (duodenum)  Jejunum  Ileum | Simple columnar epithelium  Simple columnar epithelium  Simple columnar epithelium | Goblet cells  Enterocytes with micro villi  Goblet cells  Enterocytes with micro villi (long villus)  Goblet cells  Enterocytes with micro villi (scanty villus) | Presence of gland in submucosa layer  •The duodenum has light-staining, branched, tubuloacinar Brunner’s glands proximally in its submucosa  jejunum is marked by the absence of Brunner’s glands, and Peyer’s patches  the lymphatic aggregates (called Peyer’s patches) covered with phagocytic M-cells, reside in the submucosa and lamina propria of the region | Digestion and absorption of food into blood stream.    Absorption of food.  Absorption of food |
| Large intestine | Simple columnar epithelium lines its mucosa | Absorptive cells  Presence of goblet cells  the absence of villi, plicae circularis, and Paneth cells (in adults) | The muscularis externa has its longitudinal and circular layers present. | Reabsorption of water from food  Formation of feces. |
| Anal canal | Stratified squamous epithelium | Goblet cells | In the upper region of the anal canal, the inner circular muscle layer thickens to form the internal anal sphincter; while distally, smooth muscle is replaced by skeletal muscle that forms the external anal sphincter. | Serves as a passage for feces. |

**COMPARE**

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| **SECTION/LAYER** | **SEROSA/ADVENTITIA LAYER** | **MUSCULARIS EXTERNA LAYER** | **SUBMUCOSA LAYER** | **MUCOSA LAYER** |
| Oral cavity  esophagus | Both the oral cavity and esophagus outer layers are lined by adventitia . |  | Both have connective tissue consisting of majorly collagen fibers and some elastic fibers. | Both oral cavity and esophagus are lined by non-keratinized stratified squamous epithelia cells. |
| Stomach  Small intestine | Outer layer lined by serosa | Both consists of an external longitudinal and a middle circular layer of smooth muscles | Rich in vasculature and lymphatics | Lined by simple columnar cells  Have absorptive cells and goblets cells  Also have microvilli present |
| Large intestine  Rectum | Both Covered by adventitia | The muscularis of both have the typical inner circular and outer longitudinal musculature | The submucosa contains loose connective tissue with blood vessels | Large intestine and rectum are lined by simple columnar cells  Goblet cells |