



Faculty of Biological Science and Technology
Zoology and Botanical Department
Practical Histology

Digestive System Histology

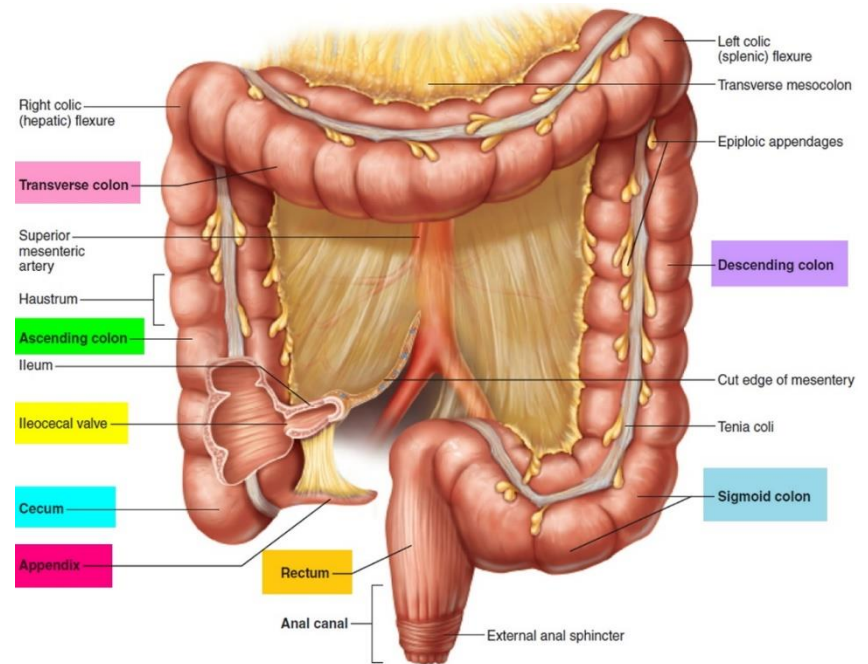
Part 3

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Large intestine

- ▶ Large intestine begins at ileocecal valve, where the ileum enters the large intestine
- ▶ Large intestine consists of caecum, colon (ascending, transverse, descending and sigmoid), rectum, and anal canal

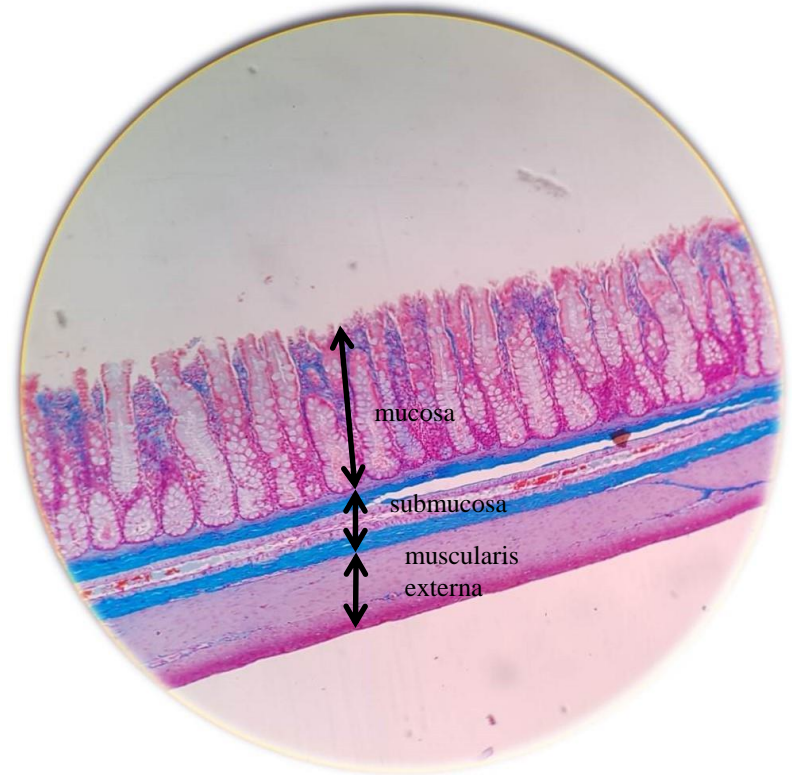


From: <https://healthjade.com/large-intestine/>



Large intestine

- ▶ The large intestinal wall made up of four layers which from lumen outward are mucosa, submucosa, muscular layer and serosa/adventitia
- ▶ Serosa is seen only in caecum, appendix, transverse colon and sigmoid



The large intestinal wall layers. H&E, 4X. This picture is taken from histological slide in histology laboratory of Isfahan University

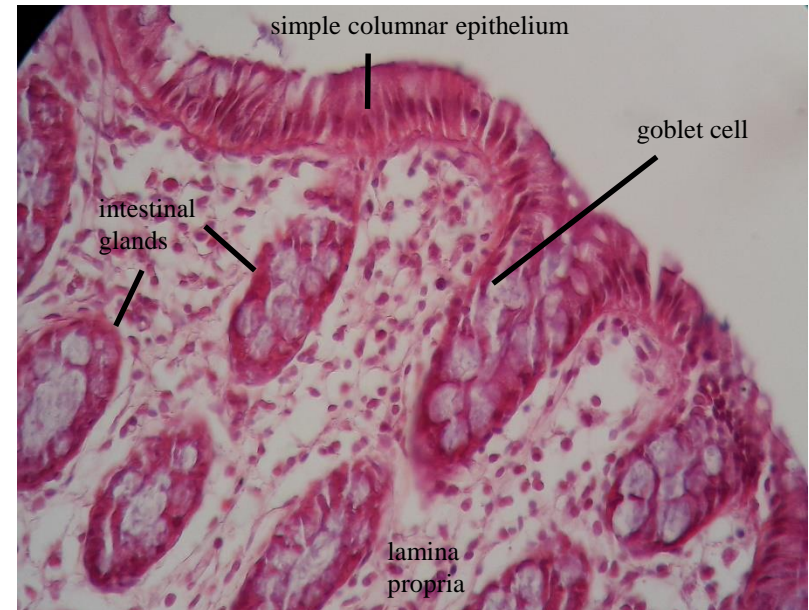


Mucosa of large intestine

- ▶ The mucosa of large intestine does not have folds like plicae circularis in small intestine, except the rectum
- ▶ Villi is not seen beyond the ileocecal valve, although crypts are found
- ▶ The lining epithelium of mucosa is simple columnar with thin brush border and numerous goblet cells
- ▶ The epithelial cells in colon are known as colonocytes



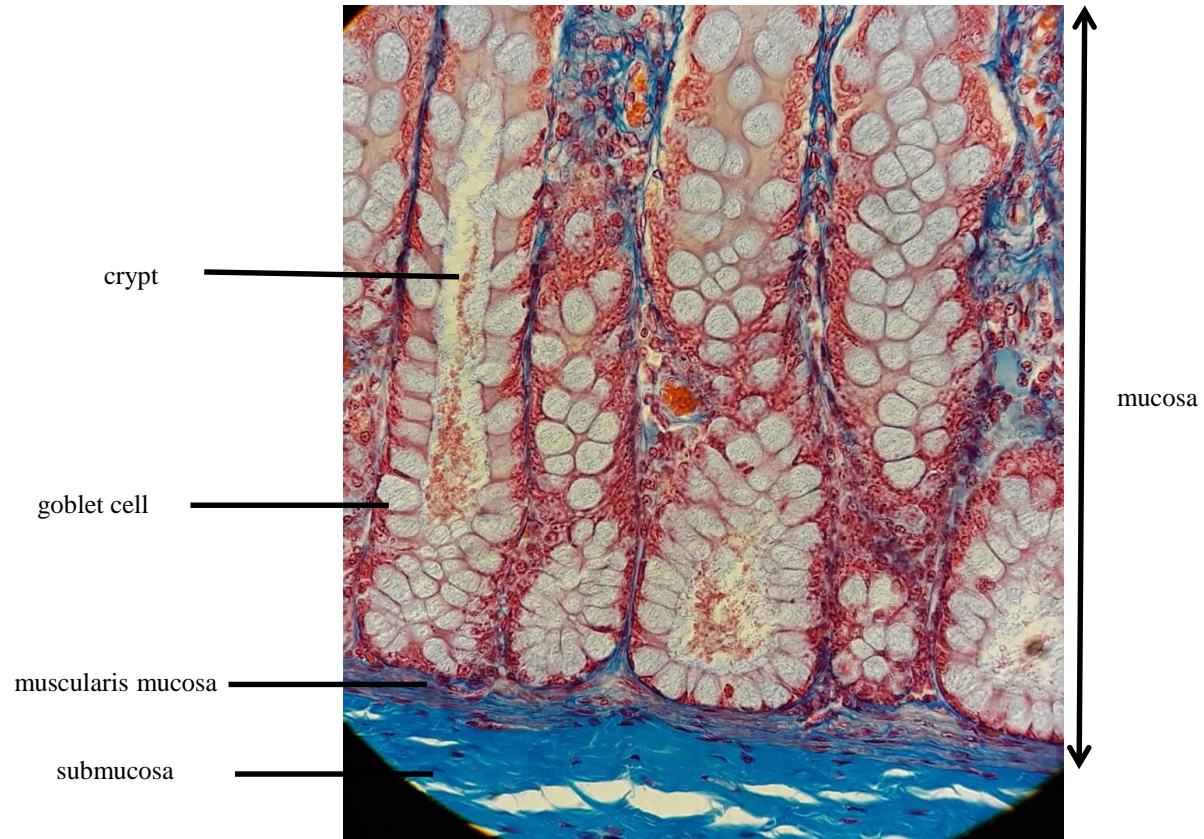
Plicae circularis in the rectum. H&E, 4X. This picture is taken from histological slide in histology laboratory of Isfahan University



Mucosa in large intestine. H&E, 40X. This picture is taken from histological slide in histology laboratory of Isfahan University



Mucosa and submucosa of large intestine

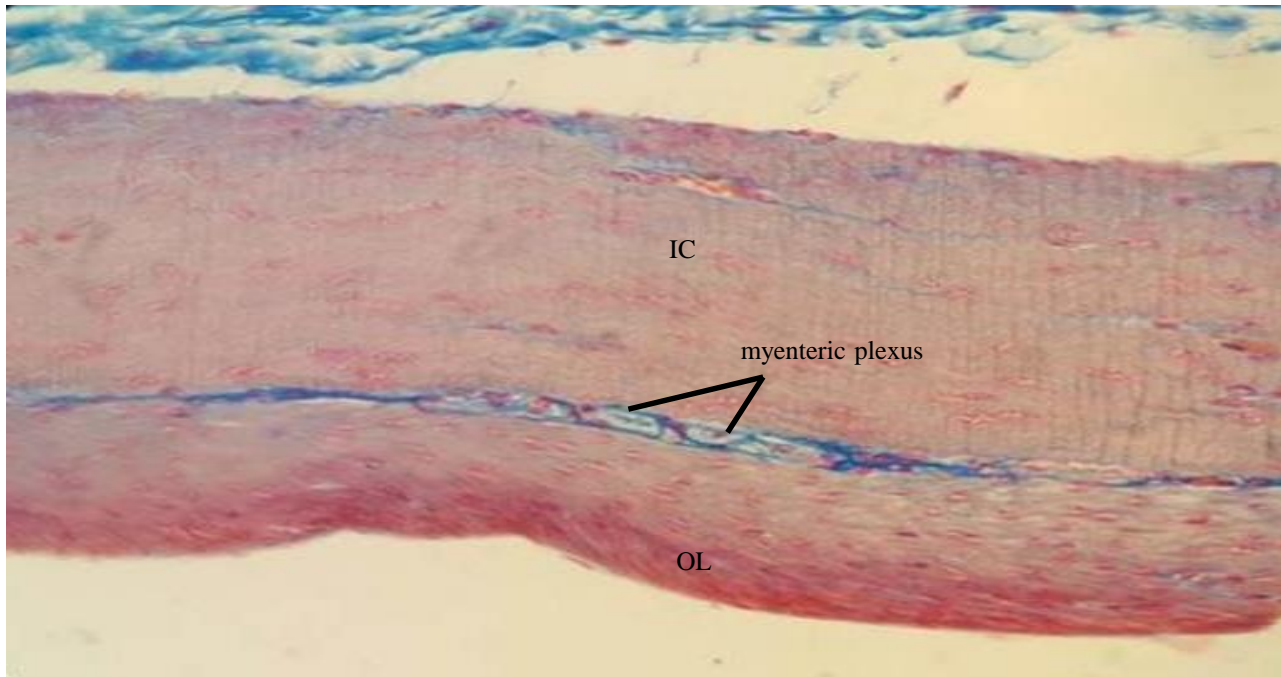


Mucosa and submucosa in large intestine. H&E, 40X. This picture is taken from histological slide in histology laboratory of Isfahan University



Muscular layer in large intestine

- ▶ The muscularis externa of large intestine is composed of inner circular and outer longitudinal layers
- ▶ The outer longitudinal layer forms three bands of longitudinal smooth muscle known as taenia coli

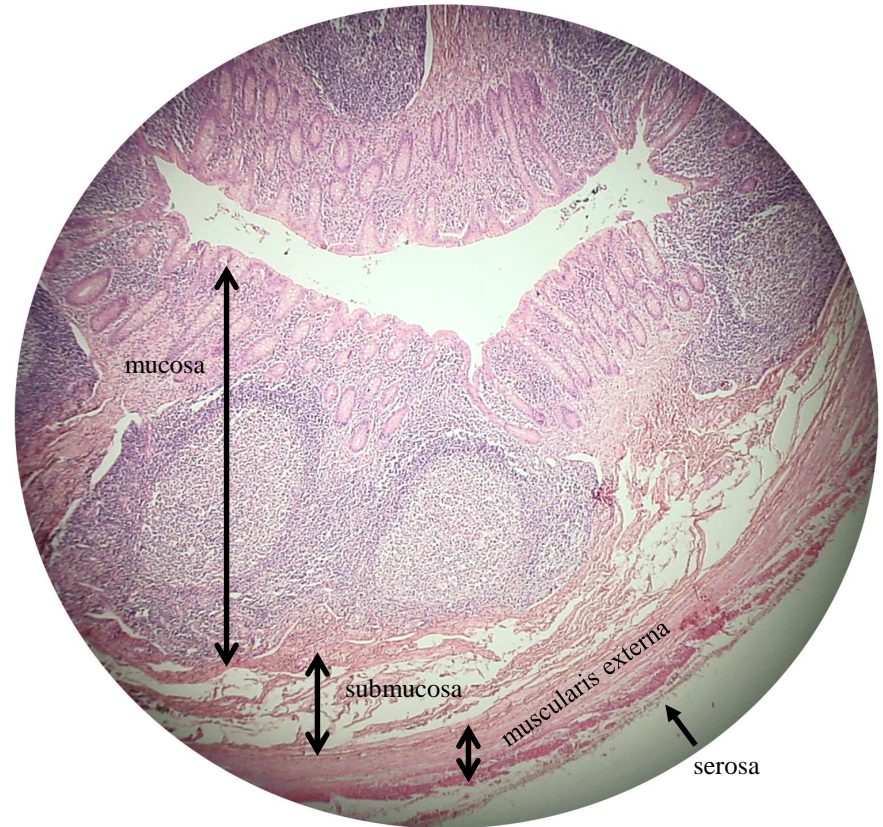


Muscular layers in large intestine. IC: inner circular, OL: outer longitudinal. Parasympathetic ganglions of myenteric plexus also can be seen. H&E, 10X. This picture is taken from histological slide in histology laboratory of Isfahan University



Appendix

- ▶ Appendix is a 8-10 cm finger-shaped, hollow vestigial that attached to the caecum
- ▶ The histological structure of appendix is similar to that of large intestine and compose of mucosa, submucosa, Muscularis externa and serosa
- ▶ Muscularis mucosa is nonintegrated in appendix
- ▶ Appendix lumen is narrow



Cross section of appendix. H&E, 4X. This picture is taken from histological slide in histology laboratory of Isfahan University



Appendix lymphoid tissue

- ▶ The most characteristic features of appendix is the large collection of lymphoid tissue in mucosa. Sometimes, some of these lymphoid tissue bulge into the appendix lumen
- ▶ Each lymphoid nodule has a pale center known as germinal center and peripheral dark area known as cortex

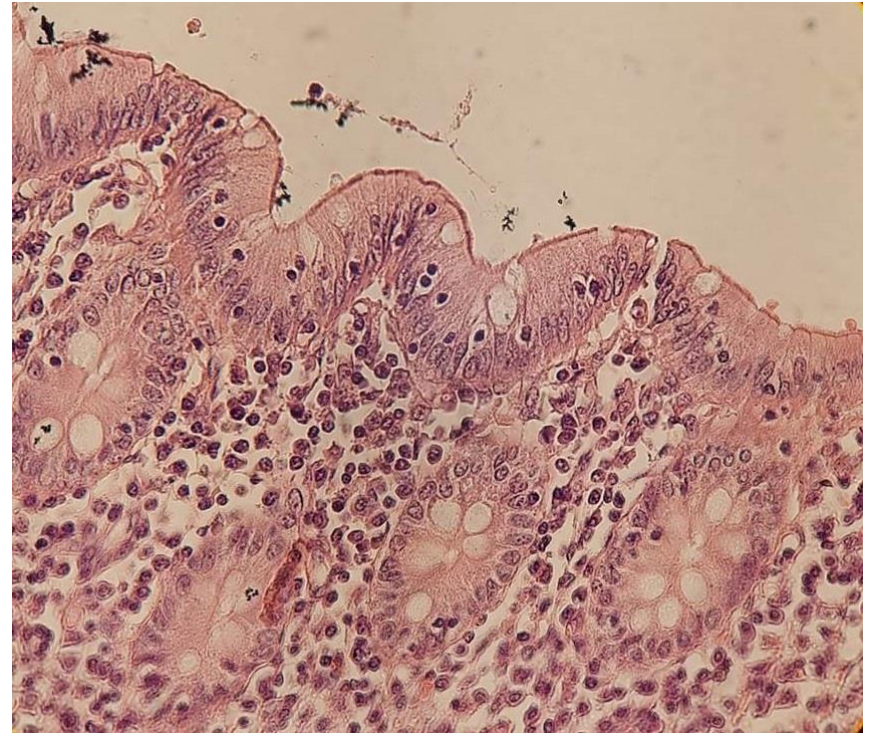


Cross section of appendix. Yellow circle depicts lymphoid nodule. H&E, 4X. This picture is taken from histological slide in histology laboratory of Isfahan University



Appendix mucosa

- ▶ The mucosa of appendix is lined by simple columnar epithelial cells and contains a large number of intestinal mucous glands
- ▶ The glands extend into deep layers of mucosa and have a high number of goblet cells similar to large intestine



The appendix wall structure. H&E, 4X. This picture is taken from histological slide in histology laboratory of Isfahan University