

General Histology Practical for second stage students

Small intestine

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Small intestine divided into three regions: **duodenum**, **jejunum**, and **ileum**

1. Intestinal mucosa

A. **Simple columnar epithelium** covers the villi and the spaces between them.

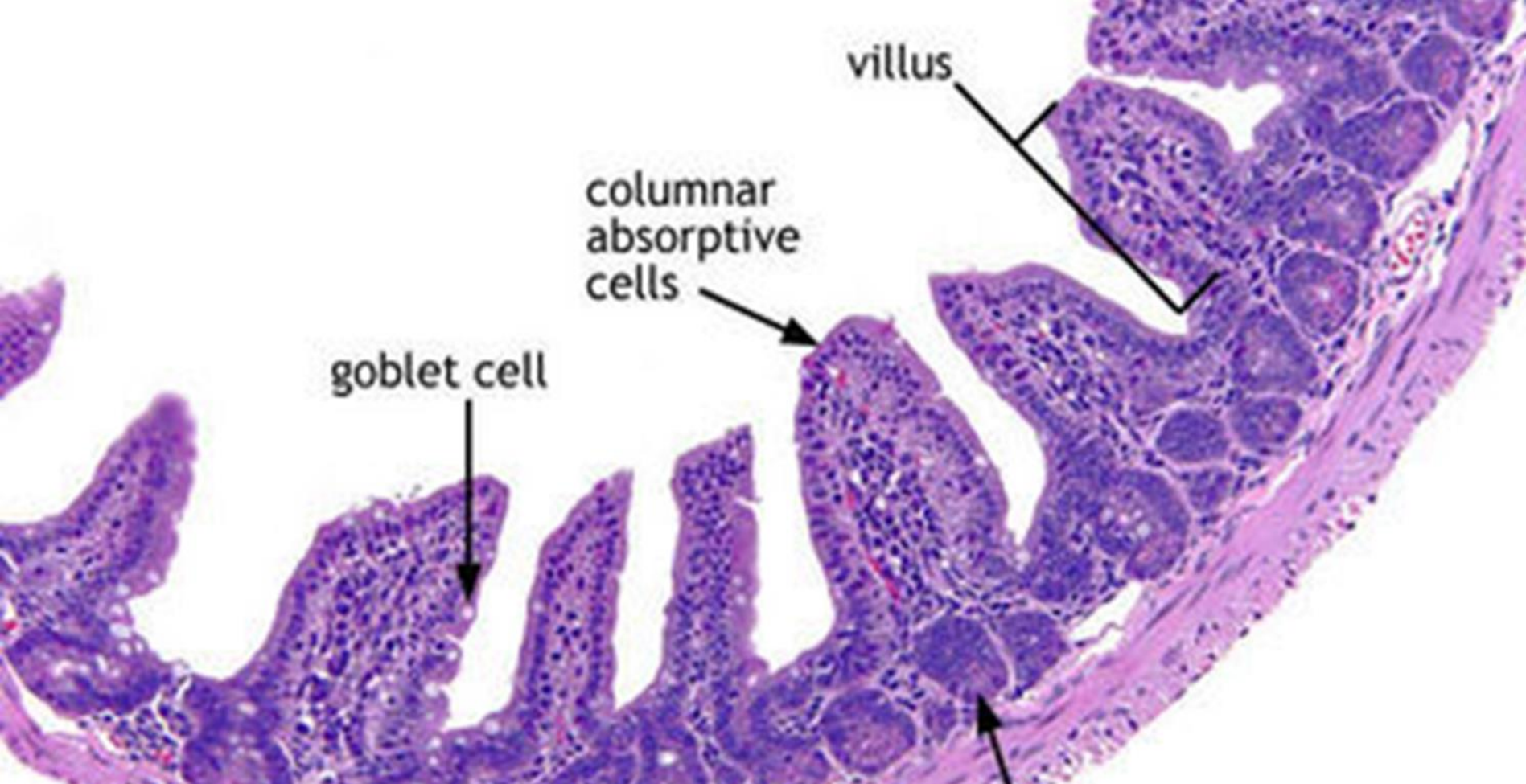
This epithelium contains **surface absorptive cells**, **goblet cells**, and **entero endocrine cells**.

B. Lamina propria is made up of loose connective tissue and forms the core of the villi.

❖ **Lamina propria** is also rich in lymphoid cells, which play a role in immune function.

C. Muscularis mucosae compressed into thin sheets due to tubular glands, known as the crypts of Lieberkühn.

Crypts of Lieberkühn are simple tubular (or sometimes branched tubular) glands that open into the spaces between the villi through perforations in the epithelial lining.



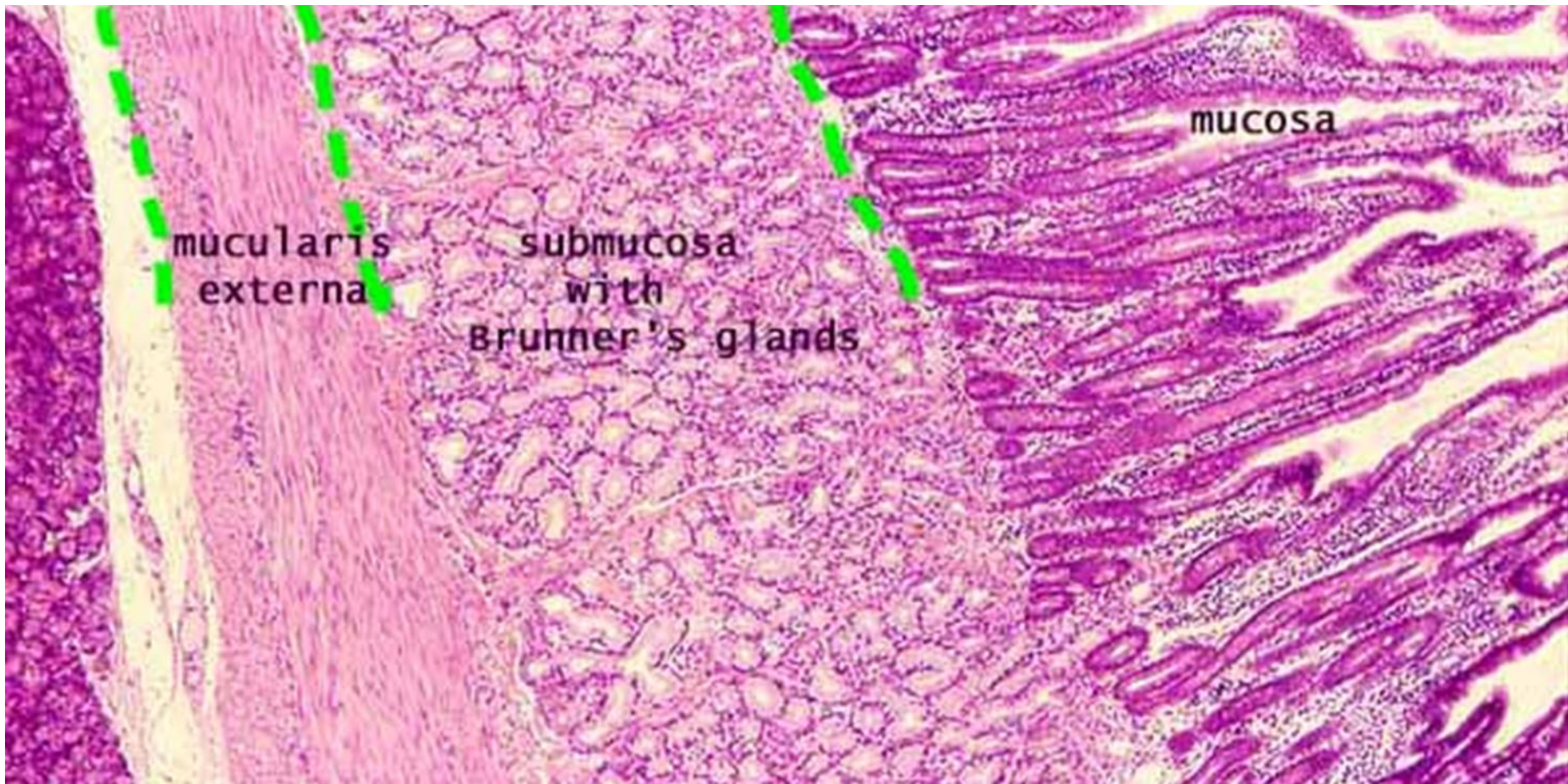
Perpendicular section in illum



2. Submucosa is made of dense, irregular fibroelastic connective tissue and contains a rich supply of lymphatic and blood vessels.

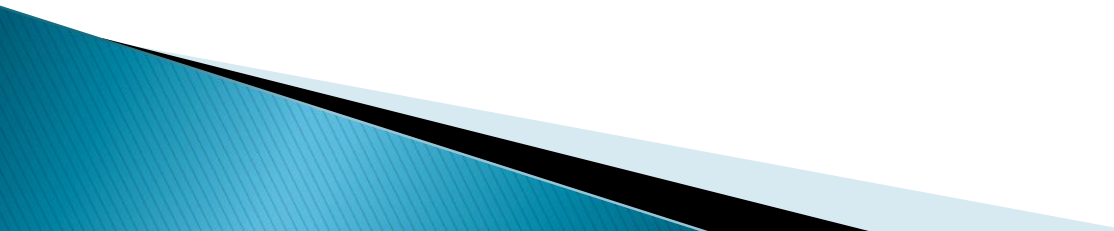
Note : The Submucosa of the duodenum is unusual **because it houses branners glands (duodenal glands).**

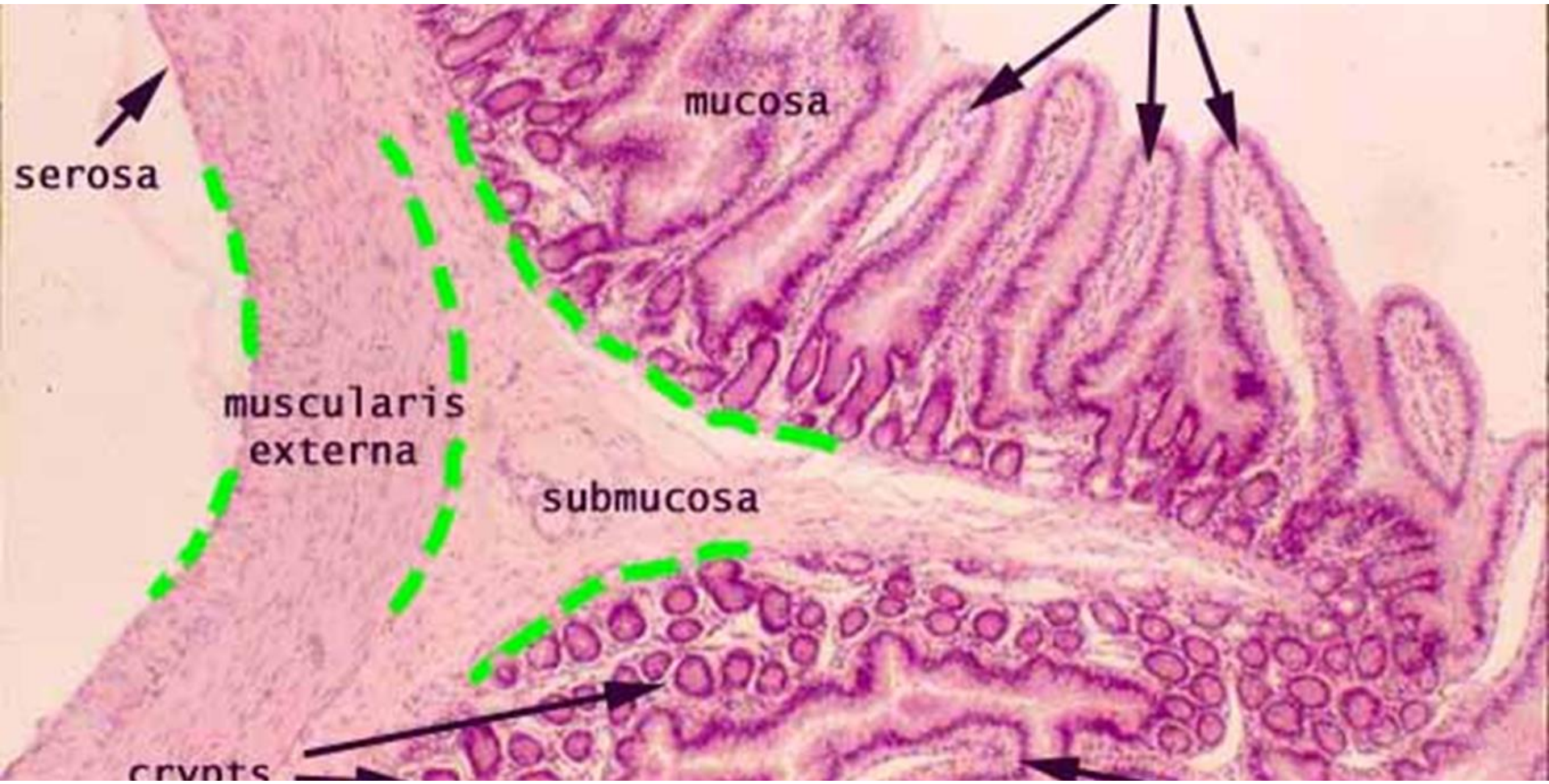
- ▶ Branched tubuloalveolar glands with secretory portion like mucous acini. Their ducts go through the muscularis mucosa and open at the base of the Lieberkühn's crypts to secrete into the duodenal lumen.



Perpendicular in duodenum



- 3. Muscularis externa** consists of inner circular and outer longitudinal smooth muscle layers.
- 4. Small intestine** is covered by a serosa.
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Perpendicular section in jejunum



The differences

- ❖ The main difference in villi :
 - ▶ Duodenum: Broad, tall, numerous villi ; fewer goblet cells; Brunner's glands in submucosa.
 - ▶ Jejunum: Narrower, shorter, sparser villi ; more goblet cells than duodenum.
 - ▶ Ileum: Sparsest, shortest, narrowest villi ; Peyer's patches in lamina propria.
 - Peyer's patches: clusters of lymphoid nodules housing in the lamina propria of illeum .



**THANK YOU
FOR
LISTENING**