

GU → gastric ulcer } → Peptic ulcer  
 DU → duodenal ulcer }

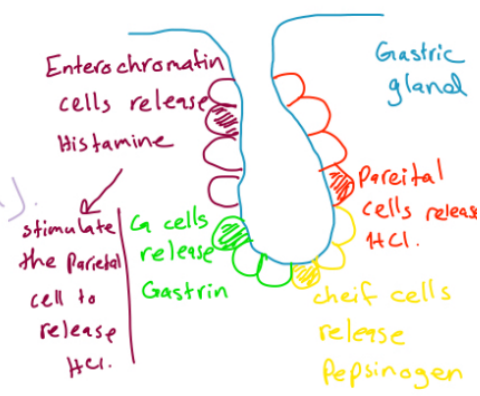
- Normal PH → (1.5 - 3.5)  
 if PH decrease, the stomach will release bicarbonate to neutralize.

Invasive force } → imbalance cause ulcers.  
 Defensive force }

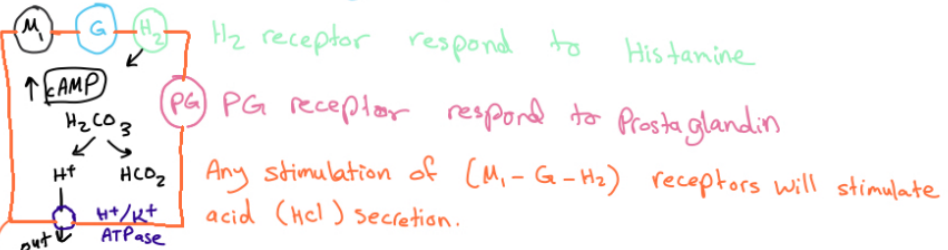
Invasive force → HCl - Pepsin - NSAIDs - Smoking - H. pylori (Gram -ve).  
 Defensive force → mucos (by gastric cells) - bicarbonate - good blood flow

Ischemia to the mucosa will cause peptic ulcer.

The should be coordination between all cells to produce HCl (complex mechanism).



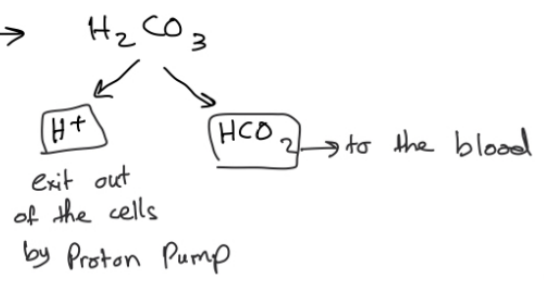
Muscarinic receptor Ach upon stimulation by vagus n.  
 G receptor respond to gastrin



Stimulation of PG receptor will cause inhibition.  
 → Parietal cells

- Parasympathetic stimulation by vagus nerve will stimulate gastric gland to produce Ach which act on M<sub>1</sub> receptor on Parietal cells + stimulate G cells to produce gastrin - Gastrin will act on G receptors and also gastrin will stimulate enterochromaffin cells which release Histamine → act on H<sub>2</sub> receptors.

- Histamine increase cAMP → stimulate Kinases →



- Back diffusion of the H<sup>+</sup> into the Parietal cells is prevent by mucos

layer, if there is disruption of the mucos layer this will make H<sup>+</sup> to back to the cells and cause erosion and Peptic ulcers.

HCl Production occur outside the cells in the lumen of the gut by  
 $\text{H}^+ + \text{Cl}^- \rightarrow \text{HCl}$   
 Both come from Parietal cells.

-  $\text{PGE}_2$  inhibit cAMP and  $\text{H}^+$  secretion so there is no HCL +  
 $\text{PGE}_2$  produce mucos layer and increase vasodilatation [Definse mechanism]

- Urea breath test → ...

Peptic ulcer → [Epigastric Pain + diffuse + increase with food]  
↳ in stomach  
but localized in duodenal ulcer.

Patient should avoid → smoking - stress - spice food.

↓  
Patient can take seddative drugs.

→ stop taking some drugs like NSAIDs.

→ Avoid fried food

Any drug has effect on cytochrome will be hepatotoxic drug.

-  $\text{H}_2$  blocker drugs shouldn't be stopped by the patient suddenly because this will make ulcers to come back [This is for all drugs that decrease HCl].

- Enterochromaffin cells and G cells are types of Neuroendocrine cells.