





Migrating myoelectric complex (MMC) and Vomiting

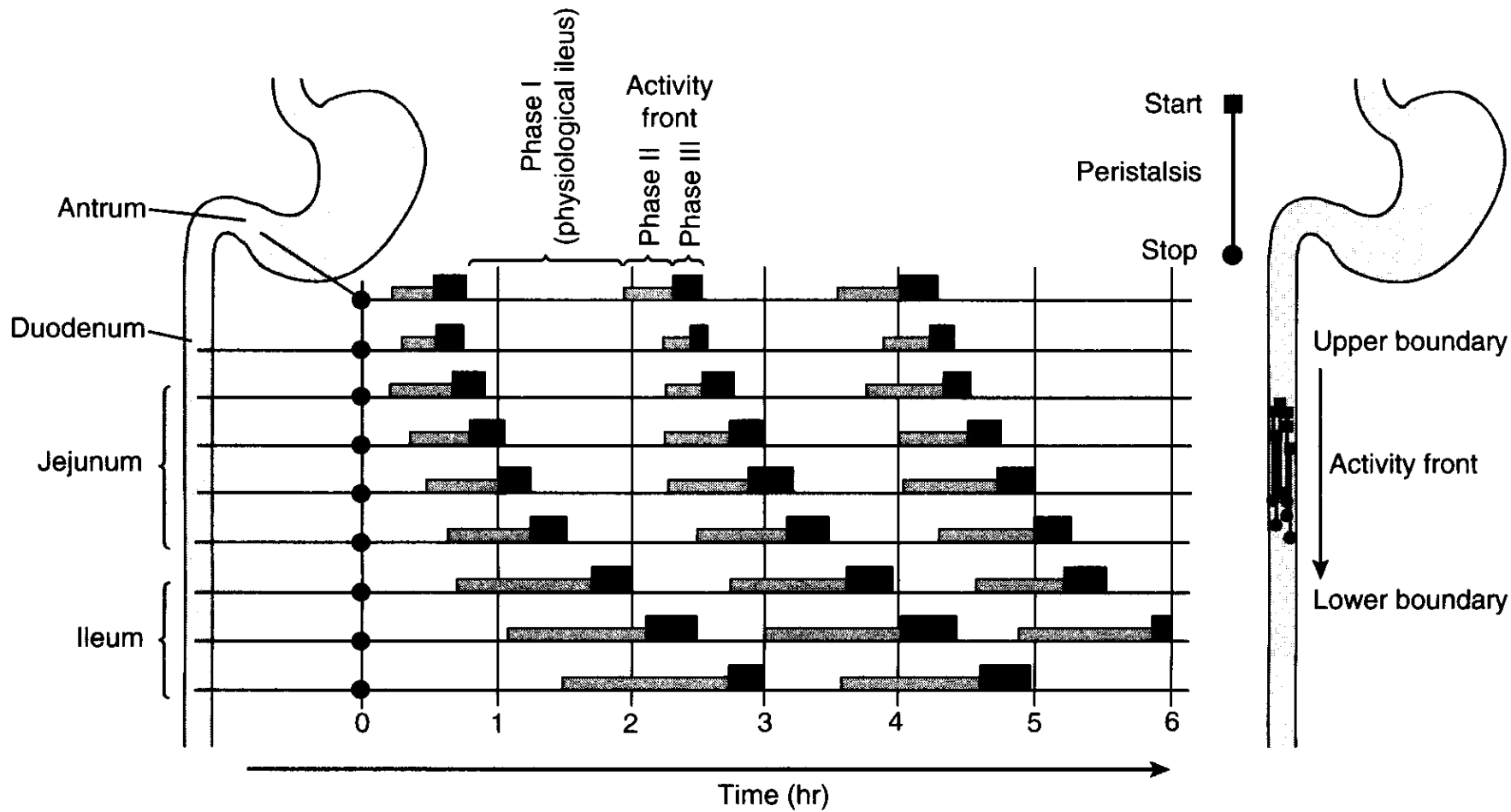
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Migrating myoelectric complex (MMC)

- Characteristics & functions:
 - bursts of electrical & contractile activities are separated by longer quiescent periods
 - pattern of motility in fasting, conscious & sleep stages
 - begins at distal stomach to ileum
 - antral contraction to propel the remaining materials bigger than 7mm

MMC

- Characteristics & functions (cont):
 - takes 80-120 min for one activity front (from antrum to ileum)
 - 3-6 cm/min in duodenum
 - 1-2 cm/min in ileum
- MMC organizer
 - ENS
 - CCK & gastrin   MMC
 - motilin   MMC



Acid secretion & duodenal ulcer

- General features:
 - Reduced mucosal defense & ↑ acid amounts
 - ↑ # of parietal cells
 - ↑ sensitivity to gastrin
 - ↑ stomach emptying
 - ↓ inhibition of gastrin release by acid
 - ↓ rate of duodenal HCO_3^- secretion
 - Pain is felt during fasting and relieved by eating which the opposite to gastric ulcer

Helicobacter pylori (H. pylori)

- Correlation between H. pylori & incidence of gastric & duodenal ulcer (peptic ulcer)
- remove of bacterial infection reduce ulcer recurrence
- Mechanism of H. pylori in the genesis of ulcers:
 - ❖ urea $\xrightarrow{\text{urease}}$ ammonia \longrightarrow neutralizes acid
(protect bacteria)
 - ❖ Ammonia destroys the protective mucosa
 - ❖ H. pylori \longrightarrow \uparrow gastrin secretion
 - antibiotic is effective in eradication of H. pylori

Vomiting

- Expulsion of gastric contents
- Preceded by:
 - retching, nausea, sweating, dilation of pupil,
 - ↑ heartbeat, dizziness
 - controlled by vomiting center
 - different areas have receptors & input to vomiting center:
 - distention of stomach
 - tickling back of throat
 - injury of genitourinary system

Vomiting

- The events:
 - 1- wave of reverse peristalsis (Retroperistalsis)
 - 2- forced inspiration (abdominal pressure)
 - 3- forceful abdominal muscles
 - 4- relaxed pyloric sphincter, stomach & LES