

SMALL INTESTINAL MOVEMENTS

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MIGRATING MOTOR COMPLEX

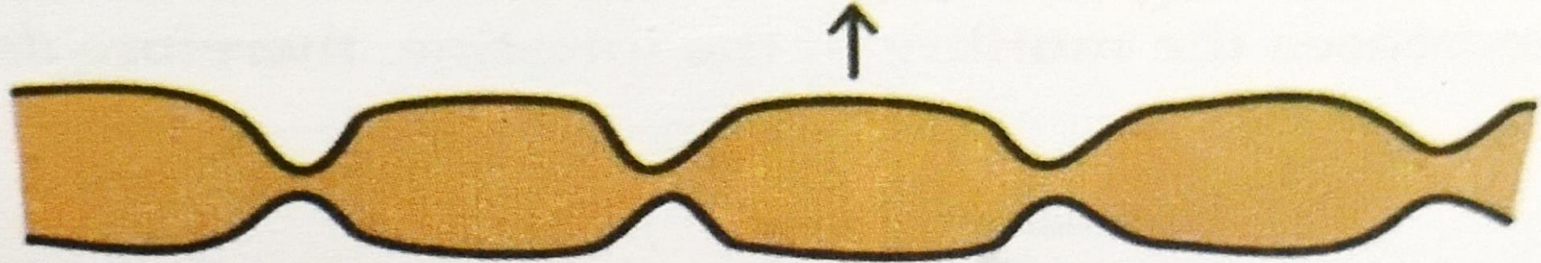
- Fasting.
- Keeps GIT clear of bacteria, undigested material, desquamated cells & secretions.
- Motilin has a role

SEGMENTATION CONTRACTIONS

- Concentric ring like contractions of circular muscles.
- Appear at regular intervals.
- Divide lumen to segments
- Stimulus-Distention of intestinal wall
- Receptors-Stretch receptors
- 10-12/minute
- Independent of extrinsic innervation

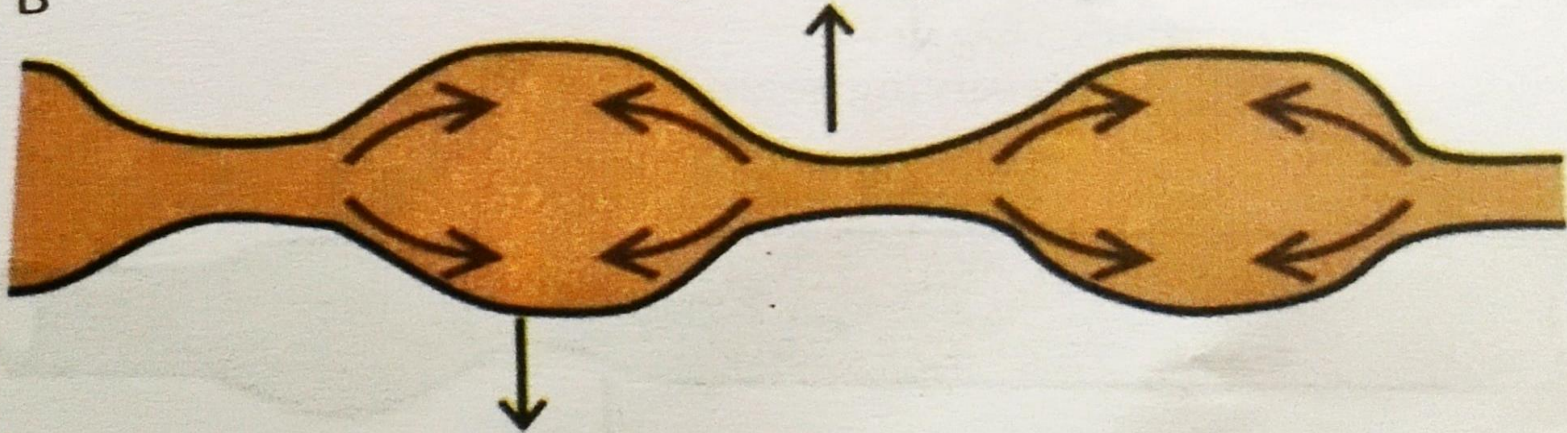
Segmental contractions

A



Propulsive segment

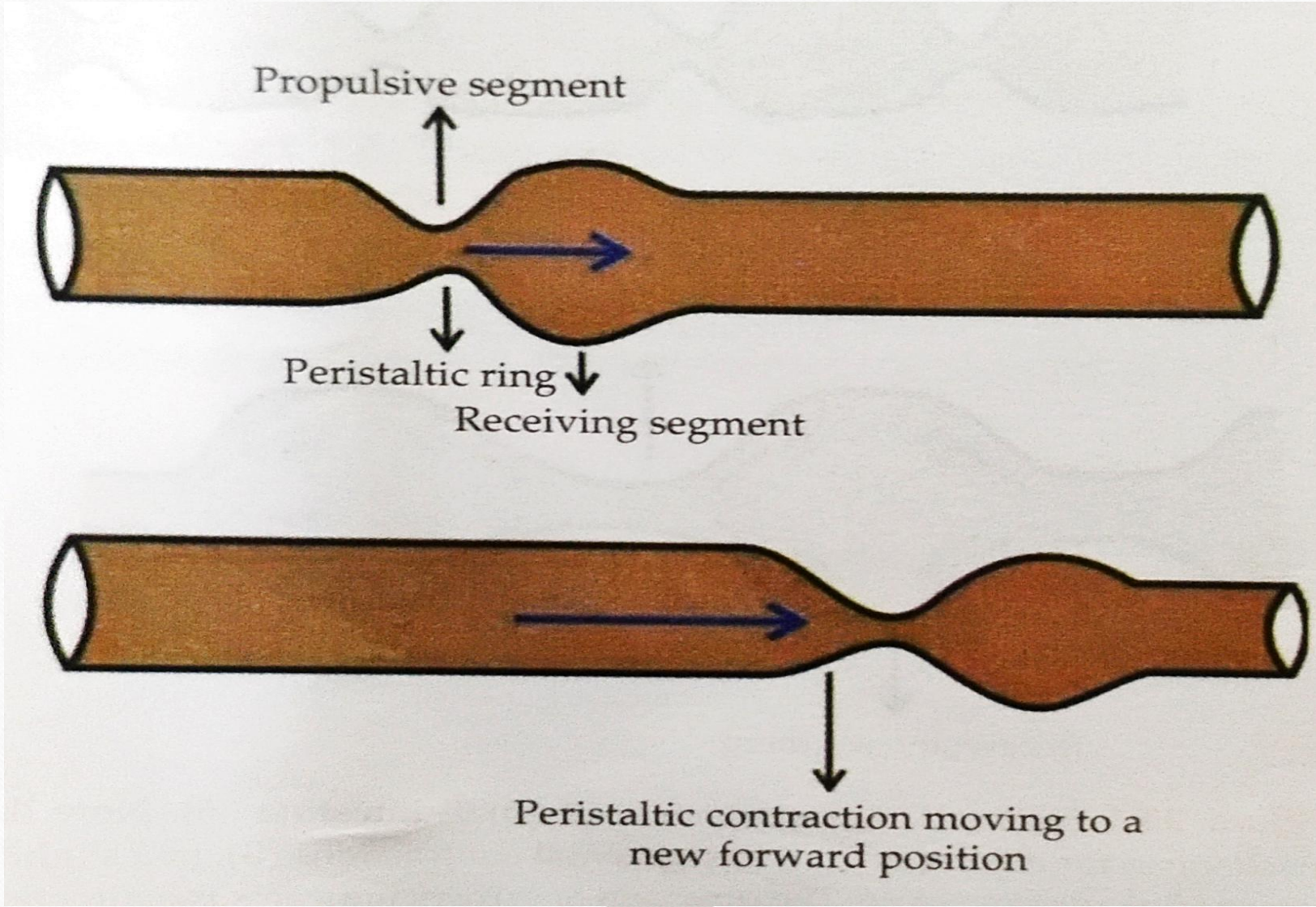
B



Receiving segment

PERISTALSIS

- Propulsive movement
- Oesophagus to Rectum
- Help to move chyme forward.
- Initiated by stretch



PERISTALSIS

- Initiated by stretch
- Local stretch- Serotonin- Activate sensory fibres of myenteric plexus- Cholinergic neurons in myenteric plexus(passing in retrograde direction)- Release acetyl choline & Substance P-Smooth muscle contraction proximal to stimulus-Cholinergic fibres in anterograde direction- Activate neurons releasing NO & VIP-Smooth muscle relaxation ahead of stimulus

PERISTALSIS

- Peristaltic wave-2 to 25cm/s
- Bowel sounds
- Law of intestine

PERISTALSIS

Factors stimulating peristalsis-

- 1) Gastro enteric reflex-Distension of stomach send impulses along myenteric plexus to intestine& intensify peristalsis.
- 2) Stretch of gut wall
- 3) Irritation of gut epithelium
- 4) Parasympathetic
- 5) Gastrin, CCK, Insulin, Serotonin

PERISTALSIS

Factors inhibiting peristalsis-

- 1) Sympathetic
- 2) Secretin, Glucagon.

TONIC CONTRACTIONS

- Prolonged contractions
- Isolate one segment from another
- Length less during life.

Functions-

1. Mixing of food with digestive juices
2. Helps in absorption
3. Massaging effect on blood vessels & lymphatics

TONIC CONTRACTIONS

MOVEMENTS OF VILLI

1. Lashing movement

2. Lengthening & shortening movement

- It increases mucosal lymph & blood flow.
- Stir luminal contents & increase absorption.

MOVEMENTS OF LARGE INTESTINE

- Segmentation, Peristalsis, Mass action peristalsis(Mass peristalsis)
- Only in colon
- Simultaneous contraction of smooth muscles over large areas.
- Usually begin at middle of transverse colon-Rectum-Rectal distension-Defecation reflex