

Digestion and Absorption

#4

Digestion of Nucleic acid

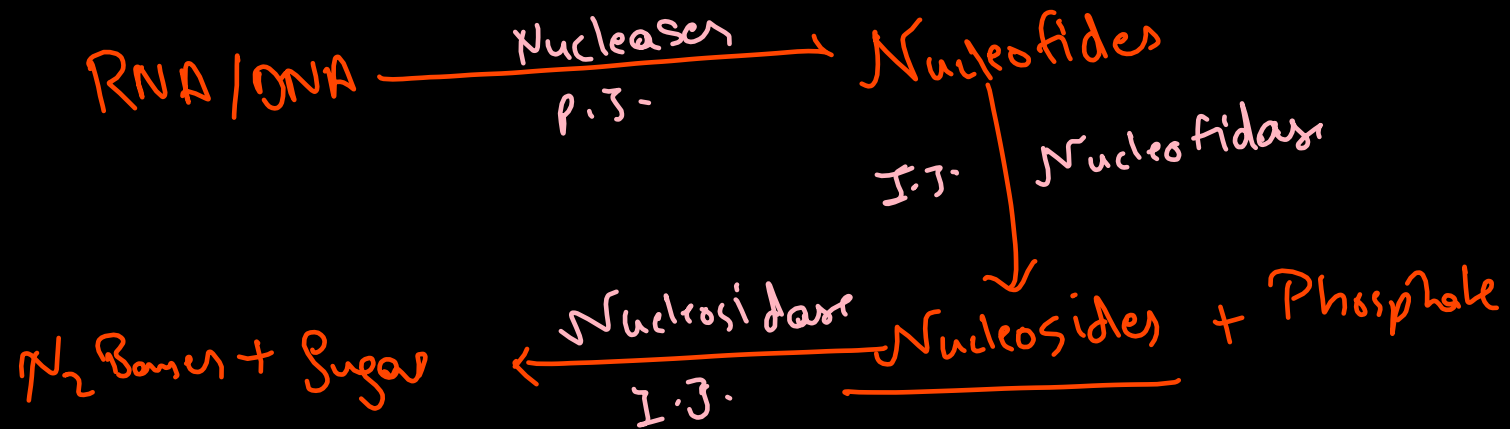
- ① Mouth → X
- ② Oesophagus → X
- ③ Stomach → X
- ④ Intestine →

4.1 P.J.

Nucleases

4.2 I.J. / S.E.

Nucleotidase, Nucleosidase



Digestion of Lipids

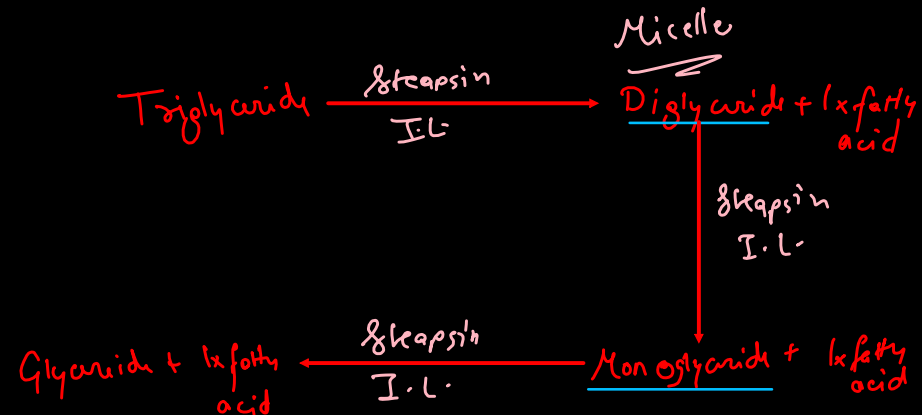
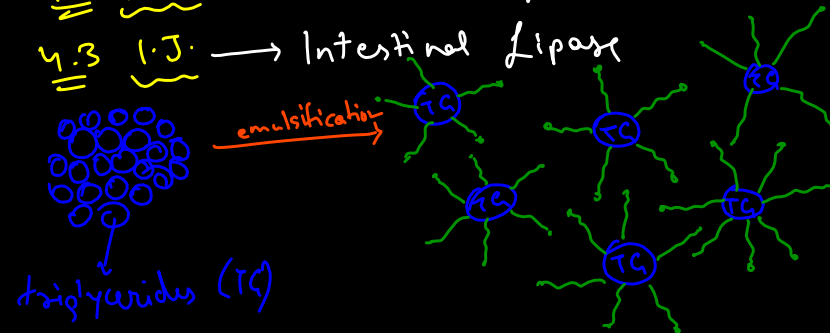
- ① Mouth → X
 ② Oesophagus → X
 ③ Stomach → very little lipid digestion due to small amounts of Gastric Lipase

④ Intestine →

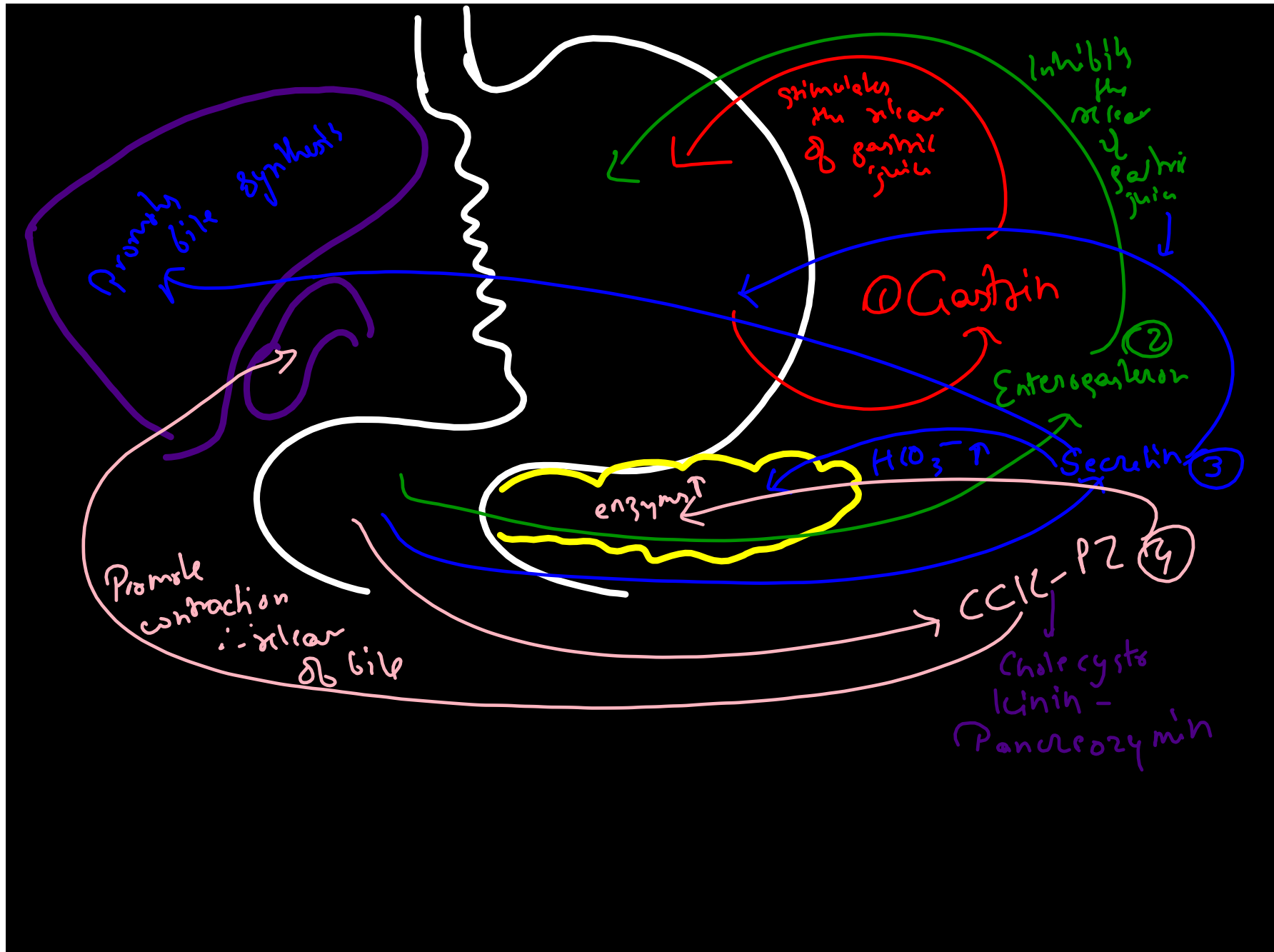
4.1 Bile → emulsification of fats/lipids

4.2 P.J. → Pancreatic Lipase (Steapsin)

4.3 I.J. → Intestinal Lipase

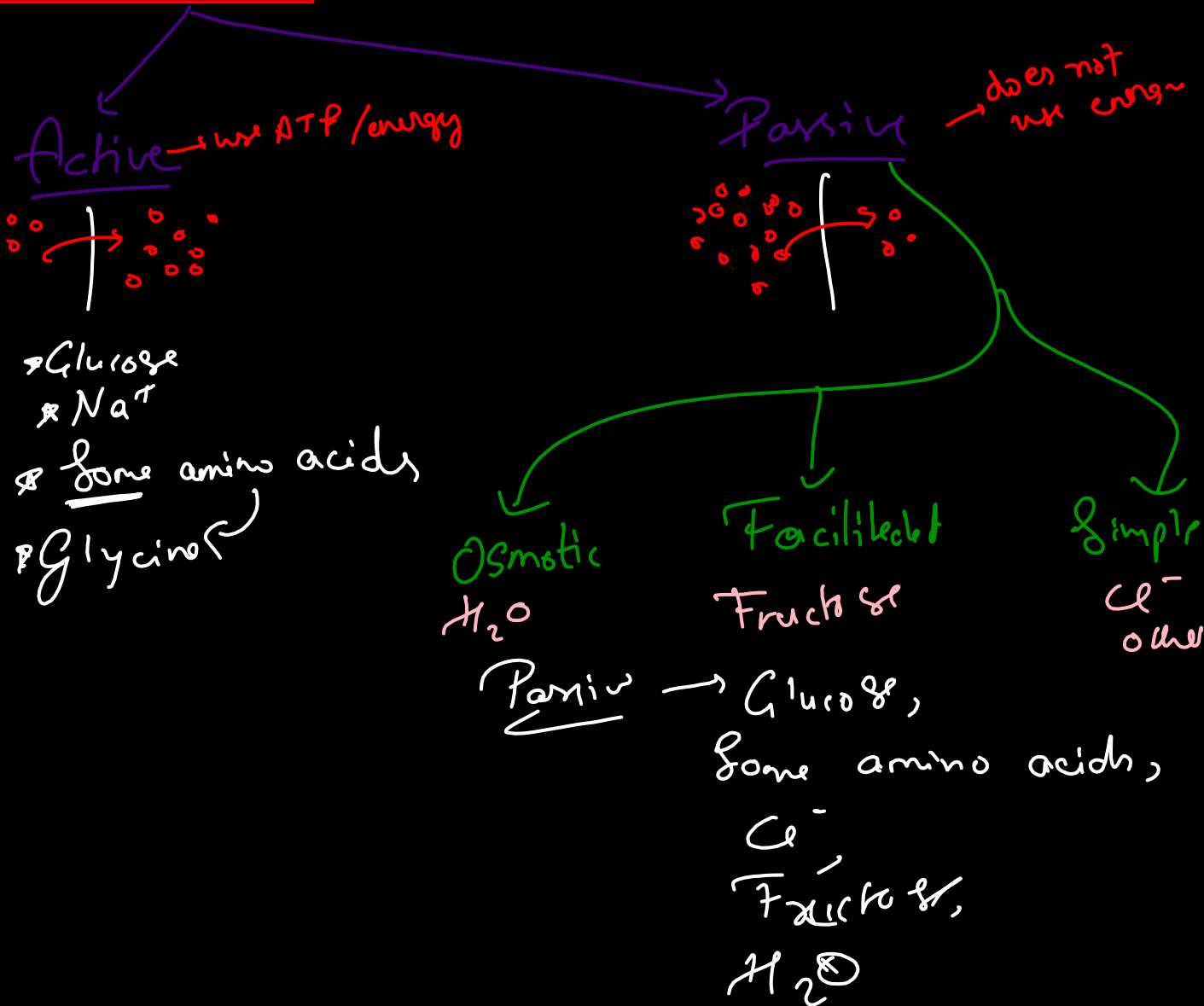


⊛ End: 1x glyceride + 3x fatty acids



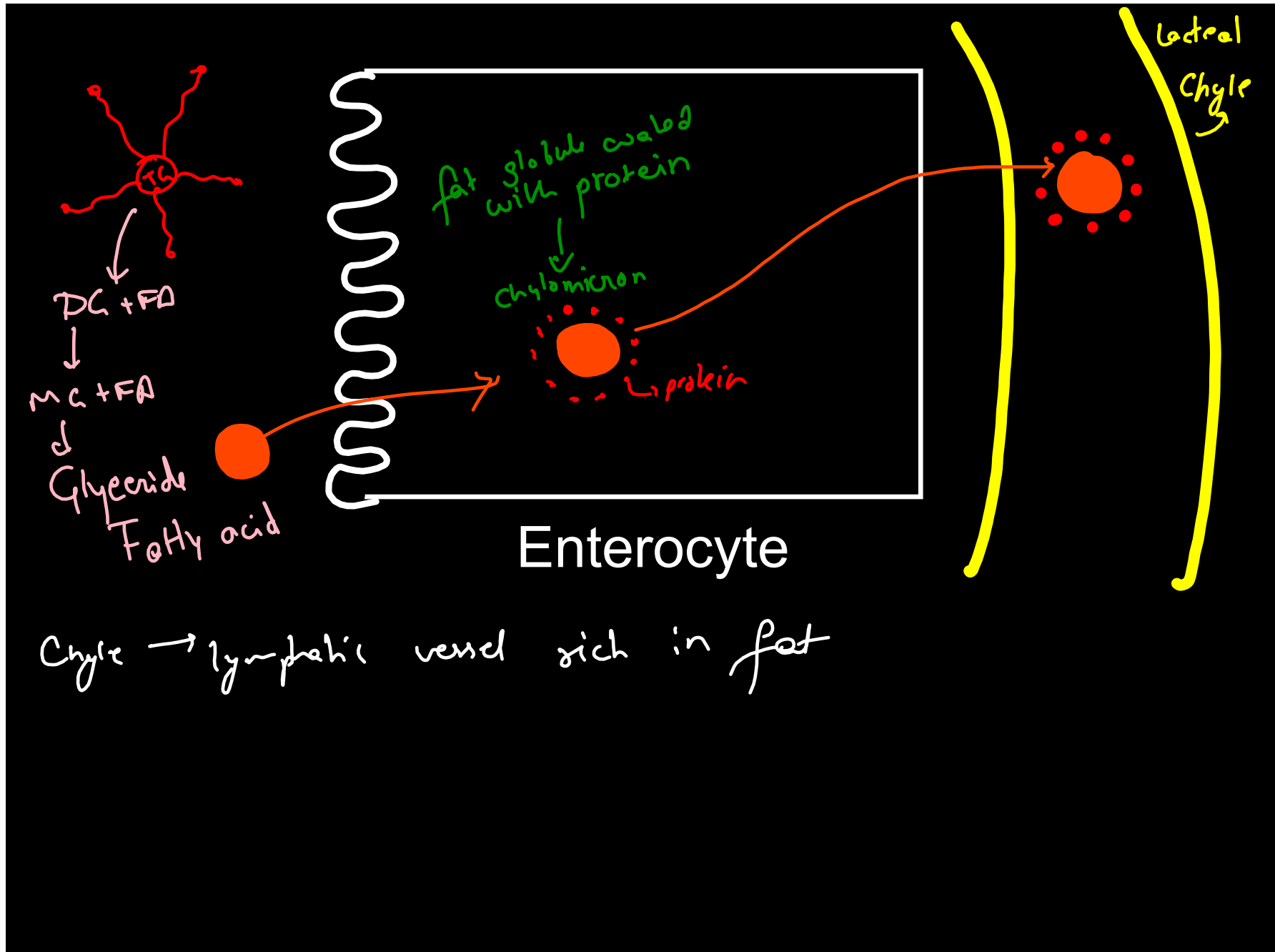
Hormone	From	Target	Action
Gastrin	Stomach	Stomach	Promote release of gastric acid
Enteroogastrin	Intestine	Stomach	Inhibit ——— " ———
Secretin	Intestine	Stomach	Inhibit ——— " ———
		Pancreas	Promote release of bicarbonate
		Liver	Promote bile synthesis
CCK-PZ	Intestine	Pancreas	Promote release of enzymes
		Gall Bladder	Promote rel. of bile

Absorption



Protein, nucleic acid, carbs → no modification for absorption
↳ in blood

Fatty acids, glycerol → need modification
↓
insoluble
↳ in lymph → lactate



Q. Does chylomicron absorb in intestinal cells?

A. False

Q. Fat digestion occurs in the intestinal lumen?

A. True

Egestion

The voluntary removal of faecal matter by
INVOLUNTARY RELAXATION OF INTERNAL
ANAL SPHINCTER and
VOLUNTARY RELAXATION OF EXTERNAL
ANAL SPHINCTER -

waste-
foul,
yellowish brownish

Calorific Value

Gross Calorific Value

- measured by Bomb calorimeter
- isolate human cell produce (in vitro)
- Carbs $\rightarrow 4.1 \text{ kcal/g}$
- Proteins $\rightarrow 5.65 \text{ kcal/g}$
- Fats $\rightarrow 9.45 \text{ kcal/g}$

Physiological Calorific Value

• actual

- C $\rightarrow 4 \text{ kcal/g}$
- P $\rightarrow 4 \text{ kcal/g}$
- F $\rightarrow 9 \text{ kcal/g}$

Disorders

① PEM (Protein Energy Malnutrition)

- 1.1 Kwashiorkor
- 1.2 Marasmus

Marasmus

- Below 1 years age
- Def. of Protein + other Cal.
- **Symptoms:** Prominent ribs, wasted or dry & emaciated skin, emaciated body, poor growth
- Mother's milk replaced too early with low low cal. diet, or mother's milk not suf.
- often 2nd pregnancy while prev. kid not grown

Kwashiorkor

- 1-5 years age
- Def. of Protein only
- **Symptoms:** Mental retardation, Oedema, degenerating muscles, thinning of limbs
- Low protein diet, high caloric

② Jaundice → malfunⁿ of liver

↓
Bilirubin & biliverdin still in blood

↓
body becomes yellowish

③ Vomiting → ejection of stomach content via mouth

→ Vom-centre: medulla of brain

④ Indigestion → food not digested properly

due to
overeating, insuf. enzymes, anxiety, stress.
↓
spicy food, no hormones

⑤ Constipation → prolonged storage of food in colon
→ extreme hardness of faecal matter
→ difficult to excrete

⑥ Diarrhoea → extreme liquifacⁿ of faecal matter
→ frequent bowel movement

~Chapter End~