

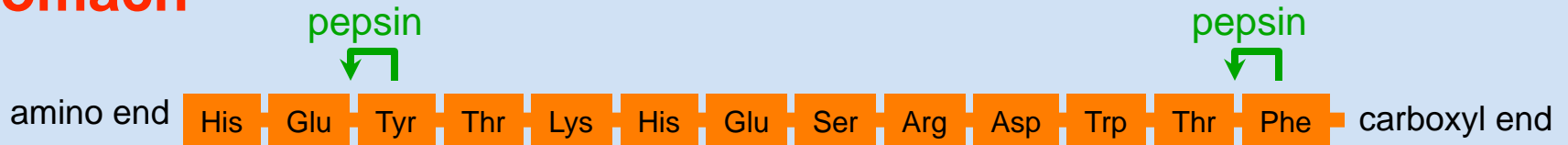
Digest: the Rest

Who's here today?

Who are we?

Protein digestion:

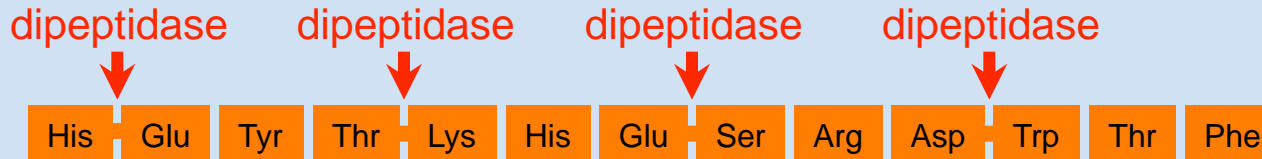
Stomach



Pancreas



aminopeptidase carboxypeptidase



Amino acids ready for absorption in small intestine

Small Intestine

Lipid digestion

- Pancreas secretes enzymes to breakdown fats
- Fats insoluble in water, tend to form large globules
 - Bile salts (actually lipids) emulsify* the lipids
 - *To combine by making the lipid globs smaller
- Brought into the cells and transported to storage in multiple forms
 - Triglycerides, fatty acids, glycerols

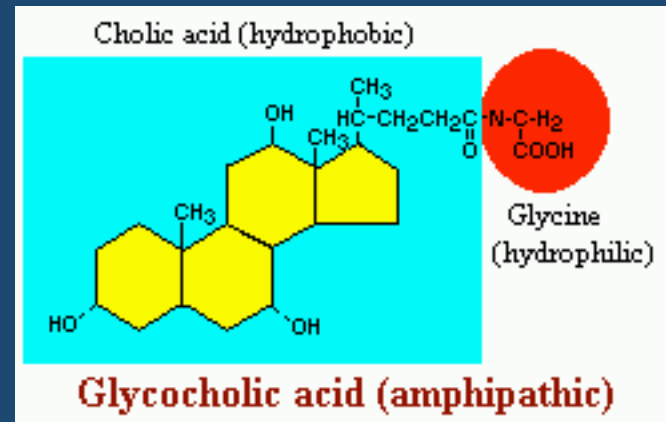
Bile

What is Bile?

- Bile is a complex fluid containing water, electrolytes and a battery of organic molecules including bile acids, cholesterol, phospholipids and bilirubin
- “Bile Salt”

What is the function of Bile?

- Bile “salts” aid in digestion of fats by emulsifying them.



Think **oil**, water, and **soap**
fat, food, and **bile**

Do it again!

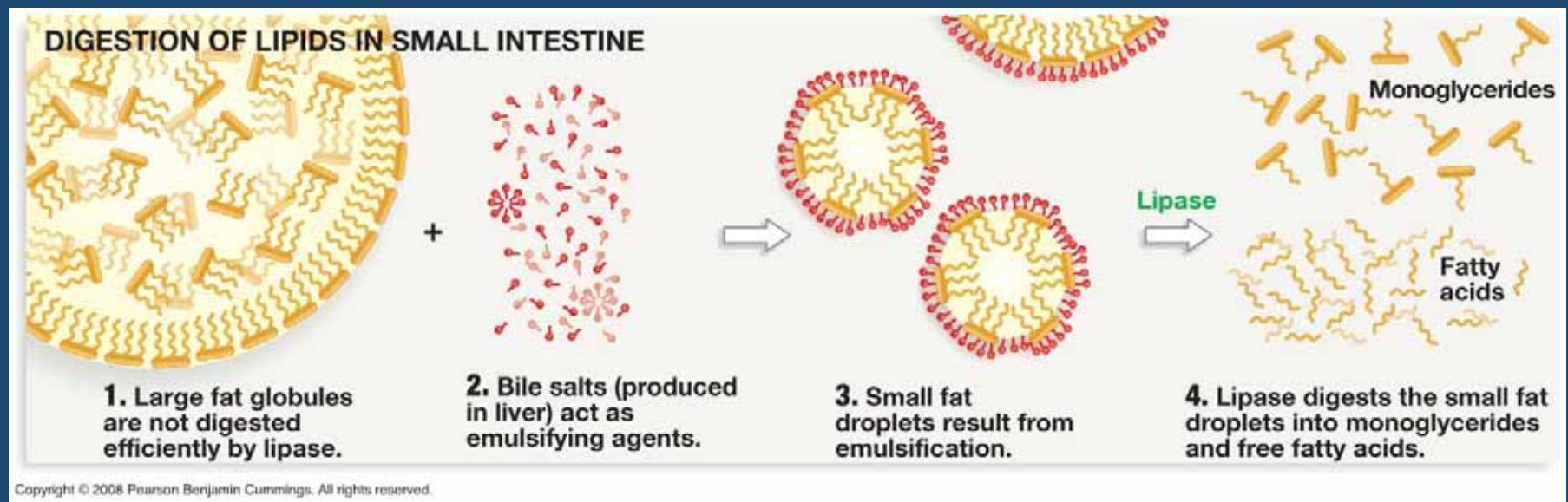


Figure 43.13 pg 971

Emulsification



Emulsification:
Separating large
globs of fat into
smaller globs in
order to increase the
available surface
area.

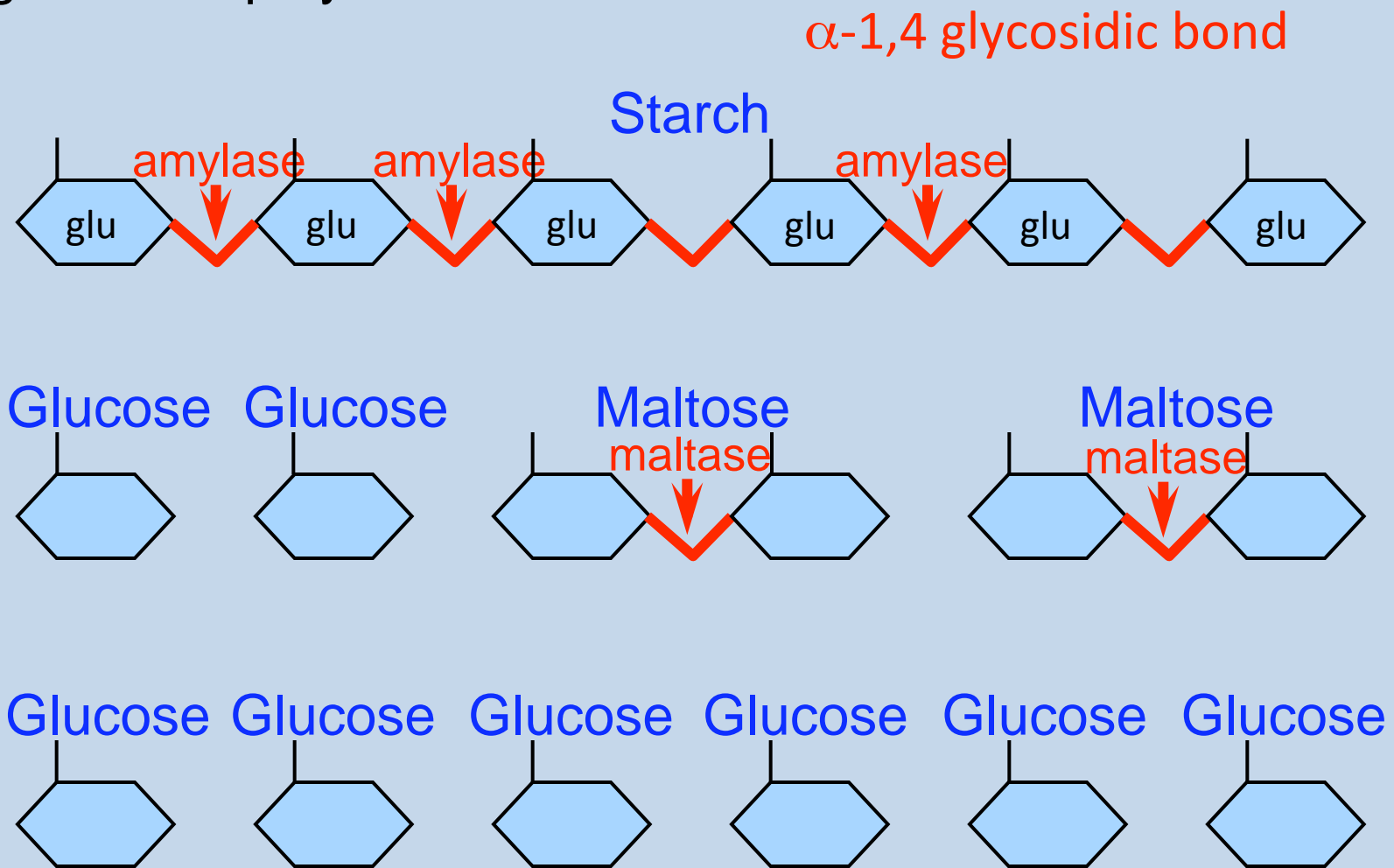
Increased surface
area leads to faster
digestion by enzymes

Small Intestine

Carbohydrate digestion

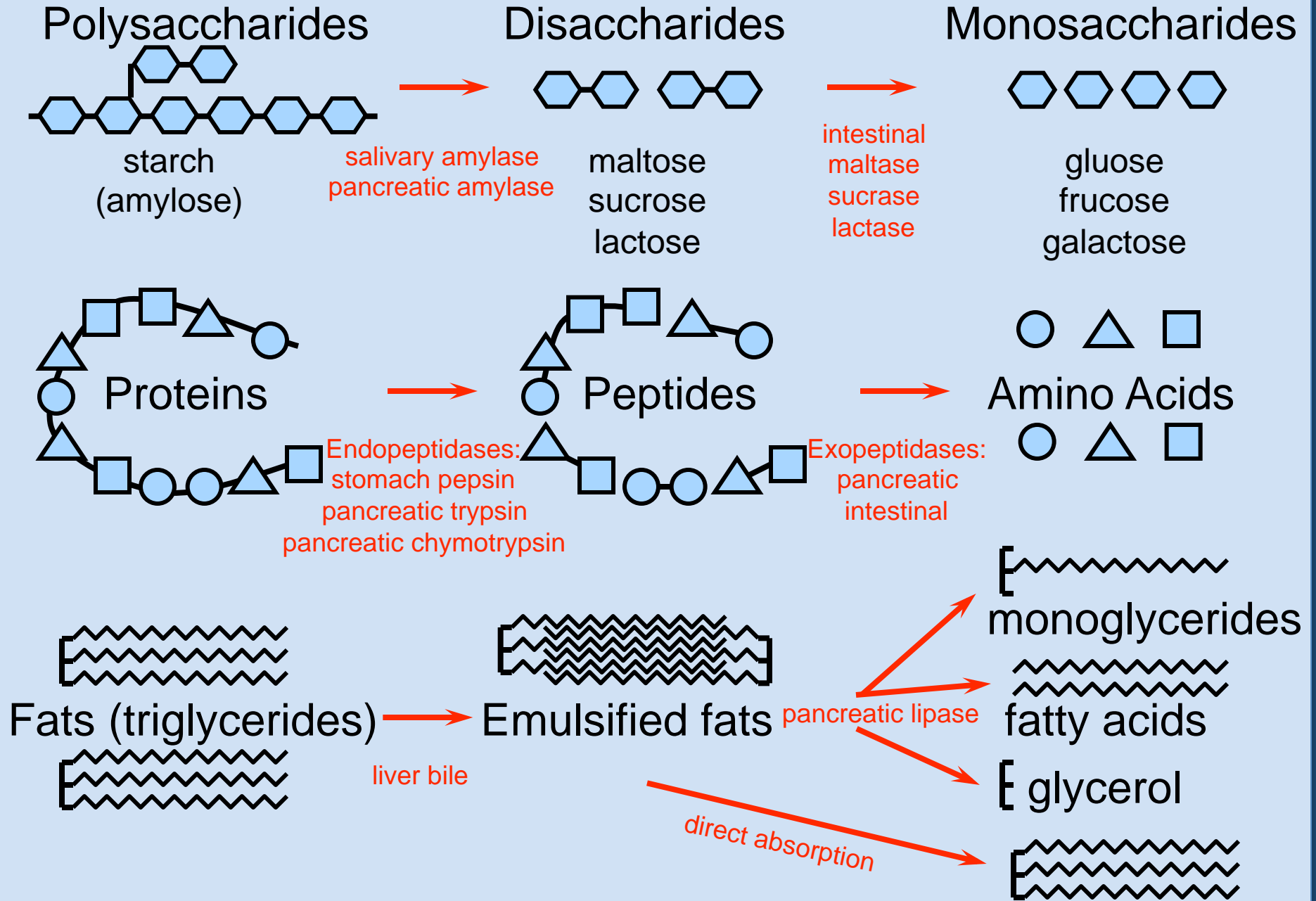
- Polysaccharides broken down further into disaccharides and monosaccharides by amylase
- Unique enzymes break down disaccharides into monosaccharides
 - Examples: lactase, maltase

Digestion of polysaccharides



These monosaccharides are ready for absorption from the digestive system.

Summary of macromolecule digestion into subunits



Digestion Review

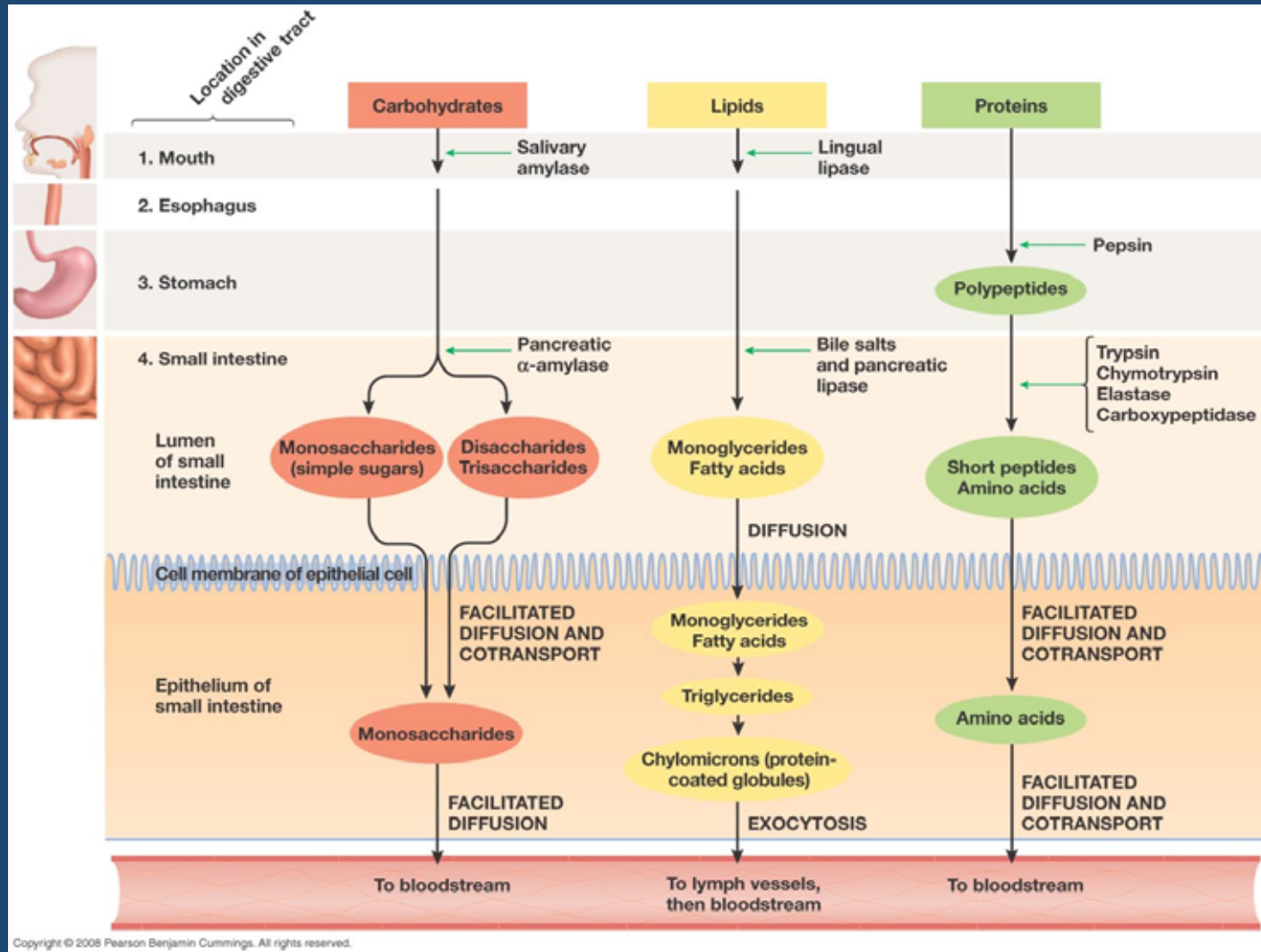


Fig 43.6 pg 964

Essay Questions

- Trace the digestion of [protein, carb, lipid] throughout the human digestive system. Include organs, functions, processes, enzymes, starting molecules, and products.
- List all the different names for carbohydrates, proteins, and lipids. What do these names signify?
- Describe how the process of activating both pepsin and trypsin are similar and different.