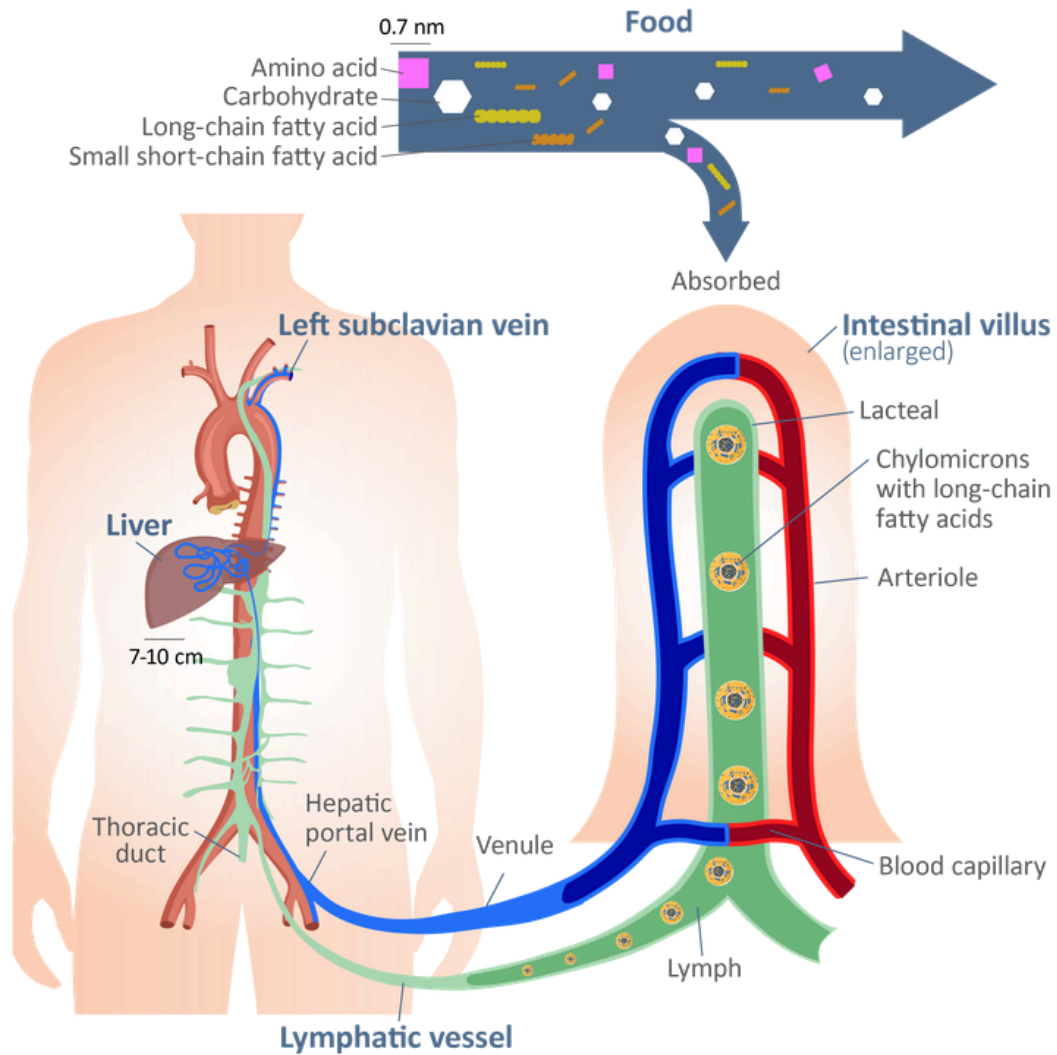


# BODY SYSTEM MODELS ELABORATE LESSON 6



## Model 1

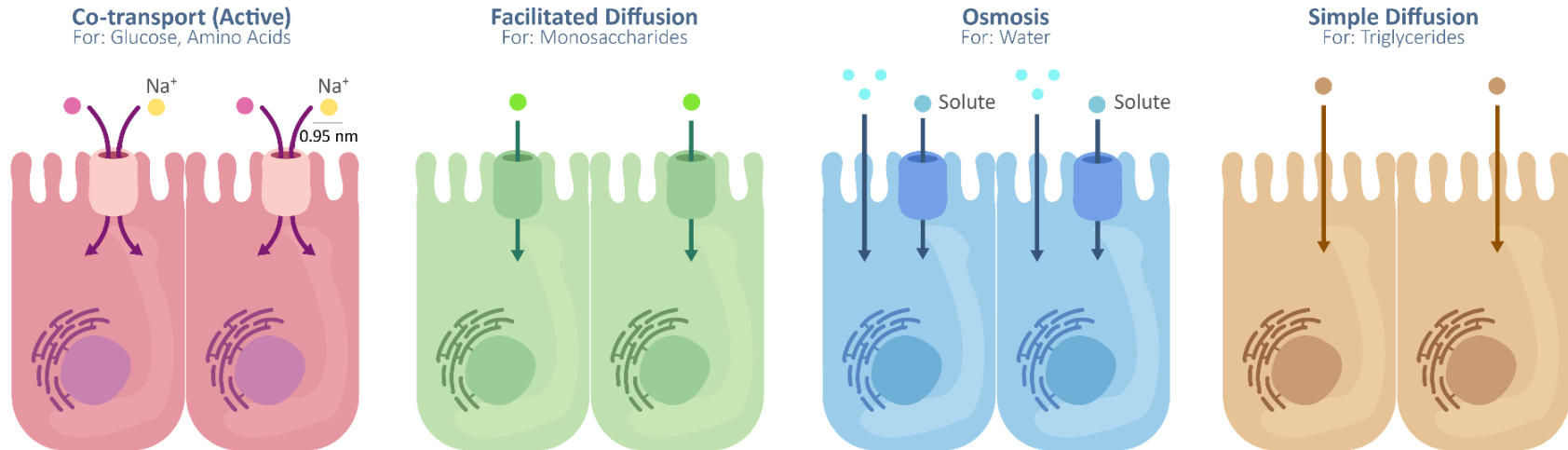
Pathway of food molecules from the villi of the small intestine to the bloodstream.



## Model 2

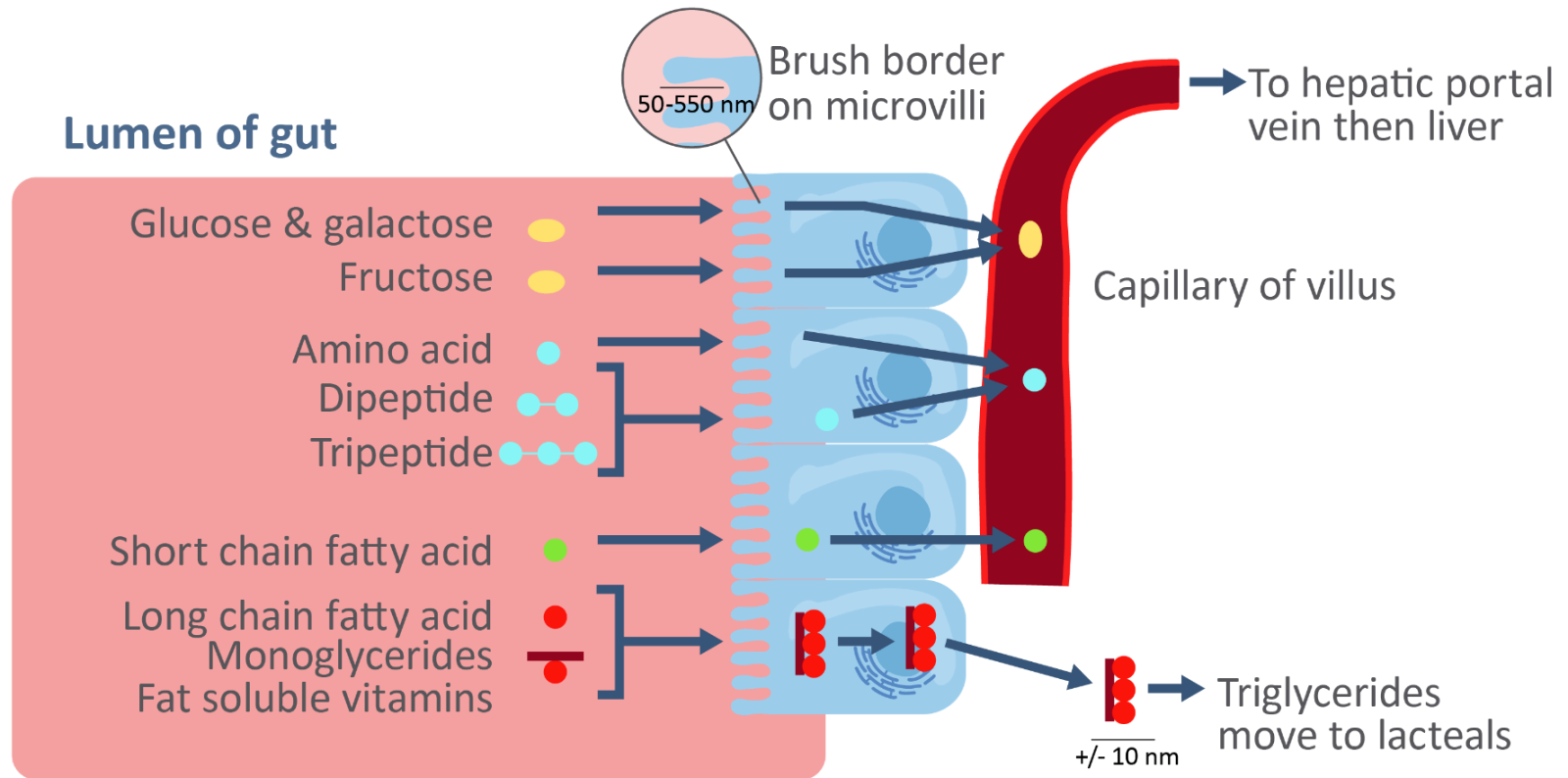
There are four different routes that molecules can use to cross the epithelial cells that line the surface of the villi of the small intestine.

- **Active Cotransport:** A protein that allows entry of large molecules into cells couples the active translocation of one molecule to the passive movement of another (e.g., sodium plus glucose, sodium plus amino acids).
- **Facilitated Diffusion:** A protein that allows entry of large molecules into cells allows molecules to pass through (e.g., monosaccharides like galactose or fructose).
- **Osmosis:** Small molecules such as water move directly through the cell membrane into the cell.
- **Simple Diffusion:** Molecules such as triglycerides are absorbed directly through the cell membrane into cells.



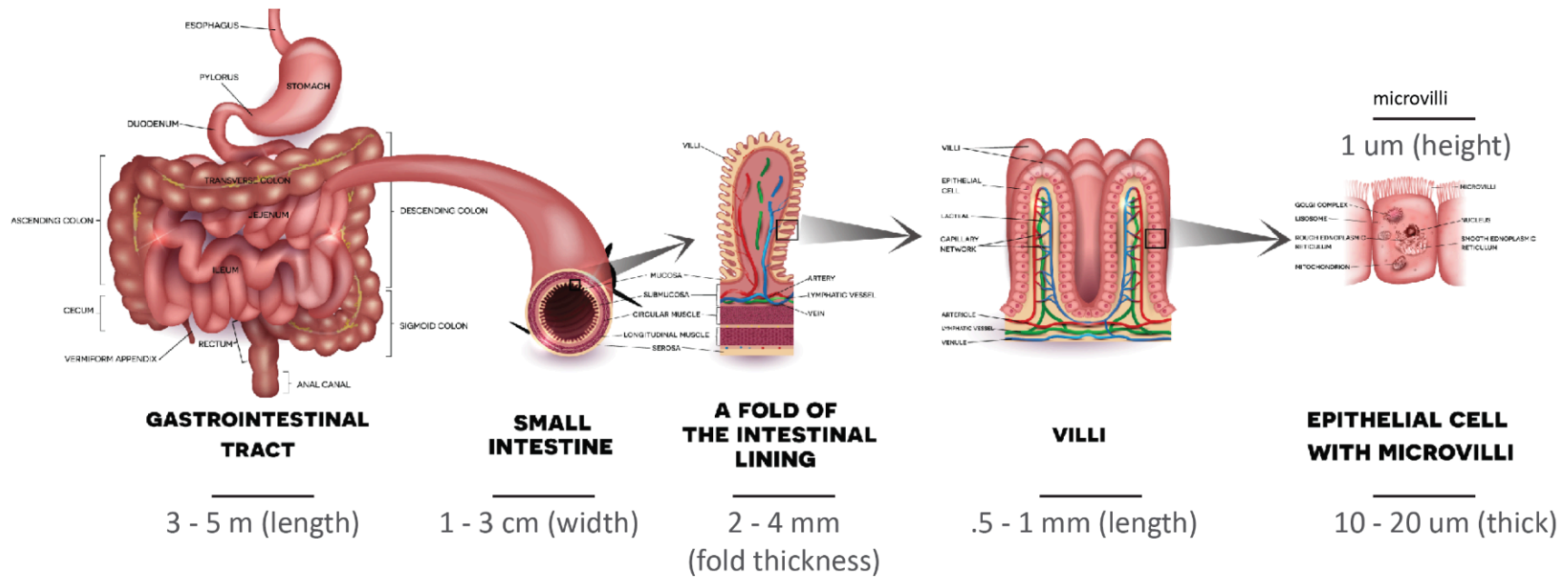
**Model 3**

Molecules in the small intestine move through the epithelial cells to reach the hepatic portal vein and the lacteal lymph vessels.

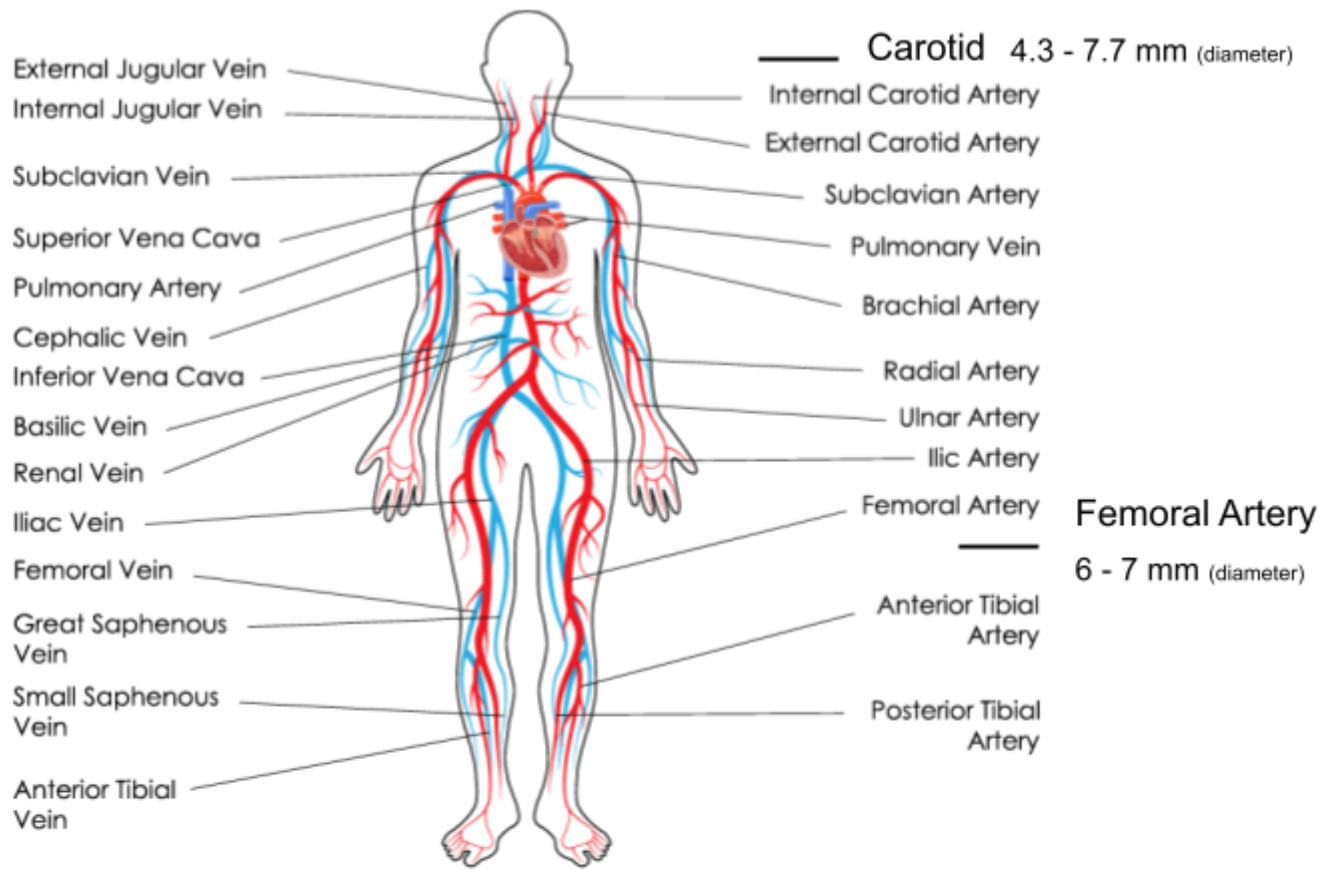


## Model 4

Spatial relationships between the structure of the small intestine at the organ level and the structure of each of the villi of the small intestine.



## Model 5



## CIRCULATORY SYSTEM