

- The actual absorption occurs through cells in an epithelial layer that is in direct contact with the nutrients
 - The epithelial cells have tiny membrane projections called *microvilli* that extend into the lumen of the intestine
- The villi and microvilli greatly increase the surface area for absorption within the small intestine
- The interior of each villus contains a capillary bed for nutrient absorption and transport of digested monomers by the bloodstream
- In addition, there's a small vessel of the lymphatic system present, called *lacteal*, that absorbs some of the nutrients
- After passing through the epithelial cells of villus most monomers are absorbed into the inner capillary bed
 - However some of the larger monomers, such as fatty acids, are absorbed first into the lacteal
- List of the substances absorbed through villi into the bloodstream or lymph fluid:
 - Water
 - Monosaccharides
 - Amino acids
 - Nucleotides
 - Glycerol
 - Fatty acids
 - Mineral ions
 - Vitamins

Digestion step-by-step

- The digestion of food starts already in the mouth
 - Teeth aid the mechanical digestion
 - Saliva contains the enzyme amylase which hydrolyses the starch polysaccharide into the disaccharide maltose (chemical digestion)
- When swallowing, the food travels down through the oesophagus, due to muscles moving (peristalsis)
- In the stomach, hydrochloric acid lowers the pH, thus further aiding digestion
 - The low pH deactivates amylase from the saliva and therefore the starch remains largely undigested
- From the stomach the food enters duodenum where enzymes from liver and pancreas are emptied