

Digestion: What is supposed to happen.

A discussion by Marilyn Sidwell Jones

When food is taken into the mouth it should be well chewed, This causes it to be mixed with saliva, which contains enzymes that start carbohydrate digestion, and breaks it into small pieces. This oral phase of digestion stimulates the stomach and pancreas.

When the food is swallowed, it is retained in the stomach for a period of time, which allows hydrochloric acid and pepsin to mix with the resulting bolus and begin the process of breaking down proteins. The carbohydrate digestion that was initiated in the mouth is stopped by the acid. A healthy stomach could drop to a pH of about 2. The stomach acid is helpful in the defense of the body against harmful bacteria that was ingested with the food.

The stomach contents are then fed into the duodenum, the first part of the small intestine. The acid content is buffered by secretions of bicarbonate from the pancreas. The pancreas also secretes pancreatic enzymes. These digest carbohydrates, protein and fat . The liver secretes bile salts, which emulsifies the fats to aid in their absorption. The bile salts are stored in the gallbladder until they are needed.

The small intestine contains what is called 'villi', small finger-like projections. where absorption takes place. Peristalsis is a phenomenon whereby the food is propelled along the gastro-intestinal (GI) tract. Carbohydrates, proteins, water-soluble vitamins, and minerals are absorbed during this process. The minerals are transported across the GI tract at specific sites, and their absorption is pH dependent. Vitamin D facilitates calcium absorption.

Fat-soluble nutrients and fat, using the bile salts, are absorbed in the last third of the small intestine, the ileum. Then everything is propelled into the colon where it is acted upon by intestinal bacteria. The bacteria play a role in the body's defense. It fulfills many useful functions, including the digestion of unutilized energy substrates, stimulating cell growth, repressing the growth of harmful organisms, training the immune system to respond only to pathogens, and defending against many diseases. Fluid is absorbed at this stage. The contents are thus concentrated and finally excreted from the body.



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