



The journey of digestion

Mark Williams*

Department of Biotechnology, Colorado State University, Fort Collins, USA.

DESCRIPTION

Your system is uniquely constructed to try to to its job of turning your food into the nutrients and energy you wish to survive. And when it's through with that, it handily packages your solid waste, or stool, for disposal after you have a defecation. The main organs that structure the systema digestorium (in order of their function) are the mouth, esophagus, stomach, gut, intestine, rectum and anus. Helping them along the way are the pancreas, gall bladder and liver.

Digestion starts before you even take a bite. After you begin eating, you chew your food into pieces that are more easily digested. Your saliva mixes with the food to start to interrupt it down into a form your body can absorb and use. after you swallow, your tongue passes the food into your throat and into your esophagus. Located in your throat near your trachea (windpipe), the esophagus receives food from your mouth once you swallow. The epiglottis may be a small flap that folds over your windpipe as you swallow to stop you from choking (when food goes into your windpipe). A series of muscular contractions within the esophagus called peristalsis delivers food to your stomach.

The bolus enters the stomach through a muscular valve at the highest called the physiological sphincter. This sphincter controls what quantity food enters the stomach and when. The stomach contains digestive juice, which contains mostly Hydrochloric acid — an acid that's strong enough to dissolve razor blades^{Trusted Source}. Pepsin — an enzyme that breaks down proteins. In the stomach, peristalsis continues, which helps to combine the food with the gastric juices. Not many compounds are absorbed into the blood from the stomach; exceptions to the present include water, alcohol, and non-steroidal anti-inflammatory drugs (NSAIDs). After 1–2 hours within the stomach, the food could be a thick paste, cited as chyme. It leaves the stomach through the pyloric valve at the underside of the stomach.

Made of three segments -- the duodenum, jejunum, and ileum -- the little intestine may be a 22-foot long muscular tube that breaks down food using enzymes released by the pancreas and bile from the liver. The duodenum is that the first segment of the tiny intestine. It's largely answerable for the continual breaking-down process. The jejunum and ileum lower within

the intestine are mainly accountable for absorption of nutrients into the bloodstream. Contents of the tiny intestine start out semi-solid, and end during a liquid form after passing through the organ. Water, bile, enzymes and mucus contribute to the change in consistency. Once the nutrients are absorbed and also the leftover-food residue liquid has skilled the tiny intestine, it then moves on to the big intestine, or colon. In the intestine, water and minerals are absorbed into the blood. Food travels through this region much slower to permit fermentation by gut bacteria. The large intestine absorbs any products produced by bacterial activity, like antihemorrhagic factor, cyanocobalamin, thiamine, and riboflavin.

Any waste left over that the body cannot use is moved to the rectum and excreted through the anus during defecation. this might occur multiple times in a very single day, or once every few days. Stretch receptors within the wall of the rectum detect when the chamber is full and stimulate the need to defecate. If defecation is delayed, the feces are often moved back to the colon where water is absorbed back to the body. If defecation is postponed for an extended period, more water is removed, the stool becomes hard, and also the individual may become constipated.