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The Human Digestive System

Human beings have quite a complex digestive process. The digestive tract for humans, from the mouth to the anus, is about 29 feet long. The digestive tract is also known as the Gastrointestinal (GI) Tract. The GI tract includes organs that are connected through a lengthy tube from the mouth to the anus. The organs that the GI tract consists of the mouth, esophagus, stomach, small intestine, large intestine, and anus [1]. The liver, pancreas, and gallbladder are also a part of the digestive system.

The human digestive system is crucial in the survival of human beings. The system has two general functions; the first function is to allow people to absorb energy and necessary nutrients from the food they eat. These necessary nutrients include proteins, fats, carbohydrates, vitamins, minerals, and water. The digestive system breaks down these nutrients to allow the human body to absorb them. This helps in body growth and cell repair. The second function is to package the food residue for the disposal of waste [2]. The process occurs in a cycle. The human body performs these functions on a daily basis in order to function properly.

Digestive Process steps:



Figure 1- Visual of The Large Intestine

- 1) Ingestion- The process begins at the mouth. Food is put into the mouth where it is cooled or warmed until its temperature becomes well suited for the body. Mastication, otherwise known as chewing, occurs in the mouth through the teeth [3]. The teeth mechanically break down the food in the mouth into smaller pieces, so it can enter the body. While this is occurring, saliva in the mouth acts in chemically breaking down the food further. Saliva is a mixture of liquid substances the mouth secretes that helps the mouth soften food and easily break it down. Food bolus is created as a result which is a soft mass of food that makes travelling through the throat easy [4].
- 2) Throat- The mouth pushes the broken down food into the throat. The throat aids in allowing an individual to swallow the food. The muscles from the walls of the throat push the food bolus further down into the esophagus[3].
- 3) Esophagus- The esophagus is the swallowing tube of the human body. It connects the throat to the stomach. The esophagus uses peristalsis to push food to the stomach. In this process muscles in the walls of the esophagus squeeze the bolus forward. Muscles ahead

of the bolus relax. This lets the bolus pass through the esophagus without resistance [5]. It takes about seven seconds for the food to travel through the esophagus and reach the stomach [4].

- 4) Stomach- At the stomach, food is held for a period of time. The stomach churns, mixes and grinds the food. The glands of the stomach produce stomach acid and enzymes that mix food into a paste referred to as chyme. When the chyme is properly mixed, muscle contractions of the stomach push the chyme into the small intestine [2].
- 5) Small Intestine- The walls of the small intestine secrete bile and other juices from the gallbladder and pancreas. Peristalsis works to move food while it mixes with these digestive secretion juices. The duodenum of the small intestine further breaks down food while the small intestine jejunum and ileum act to absorb the nutrients into the human bloodstream [5]. A residue is formed after nutrients are absorbed by the body and moved to the large intestine.
- 6) Exiting the body-

- i. Colon: The residue formed by the small intestine is passed through the large intestine. first part of the large intestine is the colon. The residue is passed through the colon. Water is absorbed during this passing, leaving a soft and developed substance called stool [3].

The colon uses its muscles from its walls to separate the waste into smaller pieces.

- ii. Rectum: The broken down waste is pushed down from the lower colon into the rectum. The rectum measures eight inches and acts as a passageway between the colon and anus. The rectum gets stool from the colon. It plays the function of

deciding whether or not stool should be held. Receptors of the rectum communicate with the brain to make this decision. If the brain decides against releasing, the rectum's muscles relax and make the sensation go away while holding in the fecal contents [5]. The rectum contracts the fecal matter if the brain decides the rectum's contents can be released to the anus.

iii. Anus: The anus is composed of two muscles, one internal and one external. They are known as sphincters [3]. They provide the human body with control of the stool. The external sphincter is relied on to keep stool within the body when an individual cannot use the bathroom. When the time comes, stool is eventually released through the anus.

The large intestine and its parts are shown here. The colon is eight inches long and has four parts: ascending, transverse, descending, and sigmoid. The rectum is the lower part of the large intestine [3].

The stool being excreted from the human body through the anus marks the end of the process. Though the process is never actually over as long as an individual remains alive. The process will keep repeating in the human body from birth to death. The final product of the digestion process is not just the feces itself; it also results in a healthy, properly nourished person. The digestion process being successfully completed leads to the energization of an individual.

Reference List

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