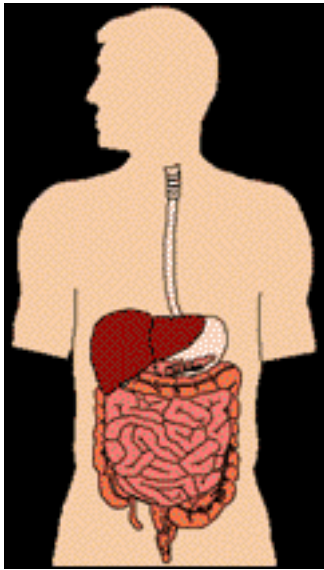


the BOWEL MOVEMENT GUIDE

GI TRACT



Your gastrointestinal, or "GI" tract, runs from your mouth all the way to your anus. It is essentially a very long and windy tube through which food is broken apart, digested, and the nutrients absorbed into your system. To get a good understanding of the process which turns your lunch into a BM (Bowel Movement), let's follow the course of a turkey sandwich with mayo and lettuce through your GI tract.



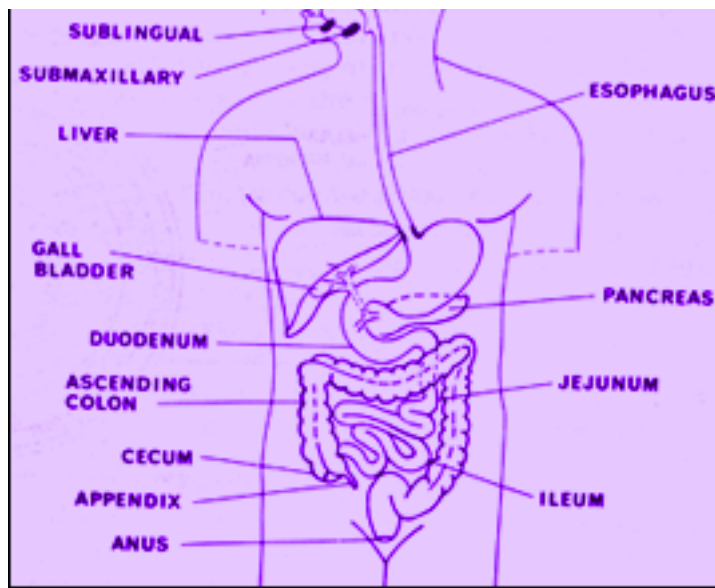
You start off by taking a bite out of the sandwich and your teeth chew it up. Saliva (water and enzymes) from your salivary glands (parotid, sublingual, and submaxillary) moistens the food and begins to digest the starch in the bread. A chewed up ball of sandwich (bolus) in your mouth then is swallowed and travels down your ESOPHAGUS. The ESOPHAGUS is a muscular tube about 22-30 cm long that passes through the middle of your chest, through your diaphragm, and attaches to your STOMACH. A SPHINCTER - a muscle that works like the drawstring of a purse - relaxes to let the food into your stomach, and then tightens to keep food from going back up the esophagus. Your stomach makes hydrochloric acid and enzymes which break down the protein - in this case, the turkey. If the sphincter isn't working just right, one gets the acidic stomach contents refluxing back into the esophagus. This is Gastro-Esophageal Reflux Disease, or GERD. This is also known as heartburn. The stomach is very muscular and also acts to grind up the food by squeezing and relaxing. Okay, our turkey sandwich is now essentially mincemeat. What next?



The stomach is connected to the SMALL INTESTINE, and another sphincter opens to let the food through. The small intestine is another hollow tube. If fully



stretched out, it would measure between 15 and 34 feet. It's divided into three sections. You can't tell where one section starts and the other stops with the naked eye - only under a microscope. The three sections, in order, are: the DUODENUM, the JEJUNUM, and the ILEUM.



Our chewed-up sandwich now enters the

DUODENUM. The LIVER makes bile, which is green and helps the digestion of fats. Bile is stored in the GALL BLADDER, and conveniently squirted into the DUODENUM when food enters. PANCREATIC juice also enters the duodenum. The PANCREAS makes strong enzymes which help break down the fats, carbohydrates, and proteins in the mayonnaise, bread, and turkey, respectively. This is where most of our sandwich is fully broken down! The pancreatic juice also contains bicarbonate, which neutralizes the strong hydrochloric acid the stomach has contributed to the mixture.

The tail end of the DUODENUM, the JEJUNUM and the ILEUM absorb the nutrients from the broken down food. They also reabsorb water from the food mixture, and from all the saliva and other secretions that were used to break down the food. The small intestine also contains helpful bacteria which aid the digestion of certain vitamins. It may take 2-4 hours for food to pass from one end of the small intestine to the other.

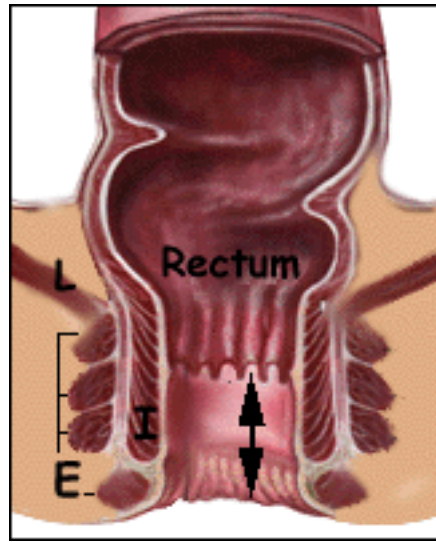


After the remaining undigested food, including the chewed-up lettuce, passes through the last part of the small intestine (the ILEUM), it passes through another SPHINCTER and enters the LARGE INTESTINE, also known as the COLON.

The colon is normally inhabited by a large number of bacteria (see the section on gas), and is between 3 and 7 feet long when fully stretched. The COLON's main function is to dry out the remaining food mixture to form stool. It does this by reabsorbing water. Stool slowly forms as it goes through the colon, starting out as a runny mixture in the beginning and ending as soft, but formed, stool. The colon also makes

mucus to help the stool slide along through the colon. The turkey sandwich may take up to 48 hours total to complete its journey through the gut - most of that time is spent in the colon.

At this point, what's left in the stool? Most of the carbohydrates, fats and protein have been digested and the nutrients extracted. What remains is undigested and indigestible food, which includes fiber - like most of the lettuce in the sandwich, bile, and mucus. Stool also contains a large amount of bacteria - in fact, bacteria make up around 60% of the final stool!



The last parts of the colon are the SIGMOID COLON (so named because it is slightly shaped like an "S"), the RECTUM, and the ANUS. The RECTUM is where stool is stored before excreted. The opening through which stool leaves your body is called the ANUS (double-pointed arrow). The ANUS has two muscular sphincters, the Internal (I), and the External (E) sphincters. These strong muscles are crucial in keeping the stool in your RECTUM until you can find a nice toilet. You can consciously control the external sphincter, but not the internal one. The Levator Ani (L) is part of the pelvic floor muscles that also help keep you from moving your bowels before you find a toilet.

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