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18/ENG08/020

BIOMEDICAL ENGINEERING

ASSIGNMENT

Miss Egbe Amanda attended a birthday party organized by Mr. Solomon; during the party she was served fried rice, salad, fried chicken and water. **Enumerate in details the digestive processes of the above food she ate during the celebration.**

**ANSWERS**

***The digestive process of the fried rice she ate***

**The mouth**

She began to digest the fried rice the minute it entered her mouth. The saliva secreted from her salivary glands moistened the food as its chewed. Saliva releases an enzyme called amylase, which begins the breakdown process of the sugars in the carbohydrates.

**The stomach**

From there, she swallowed the food now that it’s chewed into smaller pieces. The fried rice travels through her esophagus to her stomach. At this stage, the food is referred to as chyme. The stomach makes acid to kill bacteria in the chyme before it makes its next step in the digestion journey.

**The small intestine, pancreas, and liver**

The chyme then goes from the stomach into the first part of the small intestine, called the duodenum. This causes the pancreas to release pancreatic amylase. This enzyme breaks down the chyme into dextrin and maltose. From there, the wall of the small intestine begins to make lactase, sucrase, and maltase. These enzymes break down the sugars even further into monosaccharide’s or single sugars.

These sugars are the ones that are finally absorbed into the small intestine. Once they’re absorbed, they’re processed even more by the liver and stored as glycogen. Other glucose is moved through the body by the bloodstream. The hormone [insulin](https://www.healthline.com/health/type-2-diabetes/insulin) is released from the pancreas and allows the glucose to be used as energy.

**Colon**

Anything that’s left over after these digestive processes goes to the colon. It’s then broken down by intestinal bacteria. Fiber is contained in many carbohydrates and cannot be digested by the body. It reaches the colon and is then eliminated with your stools.

In her mouth, her teeth mechanically digest the lipids, and proteins, and her salivary glands secrete salivary amylase which breaks carbohydrates into simple sugars. The chicken is now mashed up, goes to the stomach where pepsin is produced. Pepsin is an enzyme that changes proteins into amino acids in the stomach. The pancreas produces lipase, to break lipids down to fatty acids and glycerol, and trypsin to break proteins down to amino acids.

The liver produces bile which is not an enzyme, but it aids in digestion by breaking lipids down to smaller lipids which allow the lipase to have more surface are to react on. The gall bladder stored the bile that the liver produces. In the small intestine, the lipase, trypsin that was produced in the pancreas actually do the breaking down of her food.

***The digestive process of water***:

The water she drank gets mixed with food and stomach acids in her stomach. The mixture proceeds to the intestines where the mixture is absorbed in the linings of the intestines and mixed with blood. The part that is not absorbed passes on to the large intestine. This water here has a logistics function and eases the path of used food out of the body through the bowels.

The earlier part of water that is absorbed in the intestines and goes to the blood is stored in blood cells as well as plasma. This water reduces the viscosity of blood, takes it to various organs, and helps blood to take nutrients to all body parts and impurities from there back to the kidneys. In the kidneys the blood is filtered and water with the dissolved impurities (remember the universal solvent ) is passed out of the body .