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MATRIC NUMBER: 18/ENG08/023
DEPARTMENT: BIOMEDICAL ENGINEERING
Course Title: Human Anatomy II
Course Code: ANA 226
Assignment Title: Digestive system

Question

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.

INTRODUCTION

The human digestive system consists of the gastrointestinal tract plus the accessory organs of digestion (the tongue, salivary glands, pancreas, liver, and gallbladder). Digestion involves the breakdown of food into smaller and smaller components, until they can be absorbed and assimilated into the body. The process of digestion has three stages. The first stage is the cephalic phase of digestion which begins with gastric secretions in response to the sight and smell of food. This stage includes the mechanical breakdown of food by chewing, and the chemical breakdown by digestive enzymes, that takes place in the mouth.

Egbe Amanda ate Fried rice, salad, fried chicken and water. They all belong to different classes of food and have different ways of digestion and different enzymes that act on them.

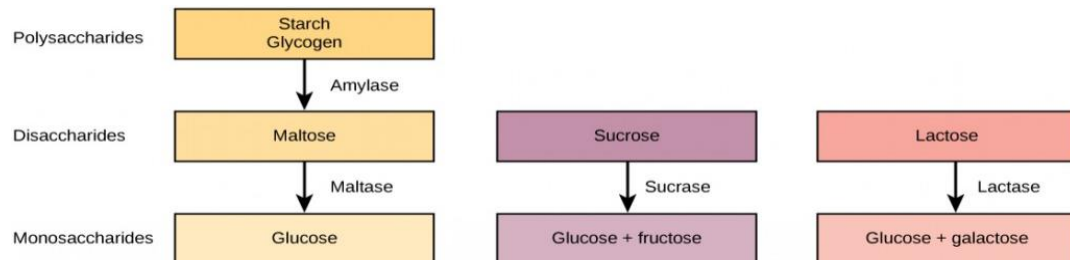
- Fried rice

RICE (Carbohydrate)

The digestion of carbohydrates begins in the **mouth**. The salivary enzyme *amylase* begins the breakdown of food starches into *maltose*, a disaccharide. As the bolus of food travels through the **esophagus** to the **stomach**, no significant digestion of carbohydrates takes place. The esophagus produces no digestive enzymes but does produce *mucous* for lubrication. The acidic environment in the stomach stops the action of the amylase enzyme.

The next step of carbohydrate digestion takes place in the **duodenum**. Recall that the chyme from the stomach enters the duodenum and mixes with the digestive secretion from the pancreas, liver, and gallbladder. *Pancreatic juices* also contain *amylase* which continues the breakdown of starch and glycogen into maltose, a disaccharide. The disaccharides are broken down into monosaccharides by enzymes called *maltases*, *sucrases*, and *lactases*, which are also present in the brush border of the **small intestinal wall**. *Maltase* breaks down *maltose* into *glucose*. Other disaccharides, such as *sucrose* and *lactose* are broken down by *sucrase* and *lactase*, respectively. *Sucrase* breaks down *sucrose* (or "table sugar") into *glucose* and *fructose*, and *lactase* breaks down *lactose* (or "milk sugar") into *glucose* and *galactose*. The

monosaccharides (glucose) thus produced are absorbed and then can be used in metabolic pathways to harness energy. The monosaccharides are transported across the intestinal epithelium into the bloodstream to be transported to the different cells in the body.



- Fried chicken
CHICKEN(protein)

A large part of protein digestion takes place in the stomach. The enzyme pepsin plays an important role in the digestion of proteins by breaking down the intact protein to peptides, which are short chains of four to nine amino acids. In the duodenum, other enzymes— trypsin, elastase, and chymotrypsin—act on the peptides reducing them to smaller peptides. Trypsin elastase, carboxypeptidase, and chymotrypsin are produced by the pancreas and released into the duodenum where they act on the chyme. Further breakdown of peptides to single amino acids is aided by enzymes called peptidases (those that break down peptides). Specifically, carboxypeptidase, dipeptidase, and aminopeptidase play important roles in reducing the peptides to free amino acids. The amino acids are absorbed into the bloodstream through the small intestines.

- Salad

Salads contain fiber. Fiber aids in digestion. Not only that, they're loaded with vitamins and minerals that you need to be healthy. Salads are easily digested, assuming you're talking about green, leafy vegetables.

In addition to small quantities of protein, carbohydrate and fat, green leaf lettuce contains water, vitamins and minerals. However, these nutrients do not undergo digestion, as they are able to be absorbed in their existing state. Water travels to your large intestine for absorption, while vitamins and minerals tag on to other bits of digested food for absorption in your small intestine.

As the food is digested in the small intestine and dissolved into the juices from the pancreas, liver, and intestine, the contents of the intestine are mixed and pushed forward to allow further digestion. Finally, all of the digested nutrients are absorbed through the intestinal walls.

- Water(vitamins)

Your small intestine moves water from your bloodstream into your GI tract to help break down food. Your small intestine also absorbs water with other nutrients. Large

intestine. In your large intestine, more water moves from your GI tract into your bloodstream.

CONCLUSION

Egbe Amanda ate fried rice, salad, fried chicken and water at Mr. Solomon's birthday party, she definitely ate a balanced diet, A balanced diet provides all the nutrients a person requires, without going over the recommended daily calorie intake. By eating a balanced diet, people can get the nutrients and calories they need and avoid eating junk food, or food without nutritional value.

Digestion time varies among individuals and between men and women. After you eat, it takes about six to eight hours for food to pass through your stomach and small intestine. Food then enters your large intestine (colon) for further digestion, absorption of water and, finally, elimination of undigested food.