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ANATOMY

ANSWER

DIGESTIVE PROCESS FOR RICE (STARCH).

Starch is the main form of dietary, digestible carbohydrates. The process of digestion involves the breakdown of a complex molecule into the simplest form the body can use. Once the starch molecule is broken down, the small intestine transfers it into the bloodstream, where it is shuttled to the cells that need it. Starch digestion is a multi-step process that begins in the mouth.

BREAKDOWN

The goal of digestion is the breakdown of nutrients into their simplest, usable form by the body. Starch is the storage form of glucose inside plant matter. It is a polysaccharide, a molecule composed of many simple sugar molecules, called monosaccharidestion is the breakdown of nutrients into their simplest, usable form by the body. Starch is the storage form of glucose inside plant matter. It is a polysaccharide, a molecule composed of many simple sugar molecules, called monosaccharides, linked together. During digestion, the body must break down the polysaccharides into a form that it can absorb. The three absorbable forms of nutrients that starch can provide are glucose, fructose and galactdes, linked together. During digestion, the body must break down the polysaccharides into a form that it can absorb. The three absorbable forms of nutrients that starch can provide are glucose, fructose and galactose.

MOUTH AND STOMACH

The mouth does two things for digestion. It begins to mash up your food, which helps to expose macronutrients. In addition, the salivary glands secrete an enzyme known as salivary amylase. This enzyme begins the breakdown of starches. When you swallow, the food passes through your esophagus and into the stomach. The acidity of the stomach quickly extinguishes the work of salivary amylase on the outside of the food bulk. However, amylase that is on the inside of the food in the stomach is protected from the stomach secretions and continues to work. Salivary amylase continues to work for one to two hours while guarded against stomach acid.

SMALL INTESTINE

The small intestine is where digestion of starch starts to take action. The brush border of the small intestine releases dextrinase and glucoamylase, both of which slowly break down polysaccharides, chains of saccharide polymers, into oligosaccharides. Pancreatic amylase works to further break

down oligosaccharides, which are chains of monosaccharides containing more than two saccharides. Finally, oligosaccharides are broken down into disaccharides, or two monosaccharides, then further into monosaccharides, the simplest form of a carbohydrate. Maltase, another brush border enzyme, breaks down maltose into glucose. The pancreas secretes many enzymes into the small intestine that all work in concert to break down the starch molecules. Other pancreatic enzymes include sucrase and lactase, which break down sucrose and lactose, two disaccharides.

ABSORPTION

Absorption of glucose, fructose and galactose -- the products of starch digestion -- begins with movement in the absorptive cells of the small intestine. Glucose and galactose are moved into these cells via the SGLT facilitated transport mechanism, which uses sodium. Fructose is transported through another mechanism, GLUT5. GLUT2 moves all of the molecules from the cell and into the bloodstream, where the body can finally take advantage of these nutrients.

CONSIDERATION

Not all the carbohydrates you eat undergo digestion. A special type of plant carbohydrate called fiber contains molecules linked together in such a way that your digestive enzymes cannot break them apart. Although you can't derive nutrition from dietary fiber, it helps keep your bowels regular and may offer protection from diseases such as colon cancer. As another example, if you are lactose intolerant, your body does not synthesize enough lactase to break down this sugar into its monosaccharaides. Drinking milk, the primary source of lactose, can therefore cause unpleasant abdominal symptoms as it travels, undigested, through your GI tract.

DIGESTIVE PROCESS FOR SALAD (VEGETABLES)

There is a general misconception that all different types of raw vegetables are good for the health of human beings. They indeed are very beneficial in providing the human body with a vast array of precious nutrients, but only if they can be digested properly. This is a problem which not a lot of people are actually aware of. It is very important to be able to choose the right vegetables because not all of them are that beneficial. Luckily enough, vegetables can be found in abundance everywhere on earth and they are very important in providing various different types of essential minerals and vitamins.

RAW VEGETABLE AND DIGESTION

Another common misconception is that raw vegetables supposedly contain plenty of enzymes which are very efficient in enhancing the process of digestion. This could be true, but still there is an issue with all that. An average digestive system of an average person is unfortunately too weak to digest raw vegetables, so it does not actually matter if they contain the beneficial enzymes or not.

FURTHER COMPLICATIONS

There are a large number of people who experience abdominal bloating, painful sensations in the abdomen, excess gas and other digestive distresses after eating any type of meal which includes raw vegetables. One should pay attention to all the consequences of consuming raw vegetables, if there are any. Poor digestion of raw vegetables is a rather common thing among a large number of people, but the popular belief dictates that the raw vegetables are actually very healthy. As mentioned before, most types of raw vegetables contain plenty of digestion enhancing enzymes, but they also contain abundant amounts of cellulose. Cellulose is a certain types of fiber which is very hard to digest. Fibers are not cherished because they have some exceptional nutritional value, they are helpful in forming a healthy stool and maintaining proper health of the intestines. The intestinal bacteria are responsible for producing cellulase, which is actually the type of enzyme required for the digestion of cellulose. This enzyme breaks the cellulose down into blood sugar.

DIGESTIVE PROCESS OF CHICKEN (PROTEIN)

Protein is one of the most important substances in your body. Your muscles, hair, eyes, organs, and many hormones and enzymes are primarily made out of protein. It also helps to repair and maintain your body tissues. However, not all protein is created equal, and there are things you can do to help your body use it more efficiently.

Protein is a very large nutrient that's made up of smaller substances called amino acids. There are 20 amino acids, but your body can only make 9 of them. The other 11 are called essential amino acids, and you can only get them through your diet.

High-quality protein sources, such as meat, fish, eggs, and dairy products, contain all nine of the essential amino acids. These are also called whole proteins or complete proteins.

Other protein sources, such as nuts, beans, and seeds, only contain some essential amino acids. However, you can combine some of these protein sources, such as rice and beans, to create a complete protein that contains all nine essential amino acids.

ROLES OF THE ENZYMES

Protein digestion begins when you first start chewing. There are two enzymes in your saliva called amylase and lipase. They mostly break down carbohydrates and fats.

Once a protein source reaches your stomach, hydrochloric acid and enzymes called proteases break it down into smaller chains of amino acids. Amino acids are joined together by peptides, which are broken by proteases.

From your stomach, these smaller chains of amino acids move into your small intestine. As this happens, your pancreas releases enzymes and a bicarbonate buffer that reduces the acidity of digested food. This reduction allows more enzymes to work on further breaking down amino acid chains into individual amino acids.

Some common enzymes involved in this phase include:

- trypsin
- chymotrypsin
- carboxypeptidase

Protein digestion follows a very rigid process; the purpose is to break down the protein into smaller components, called amino acids, which are used to rebuild or replace damaged or dying proteins in the body after digestion is complete. There are nine essential amino acids, which are often referred to as building blocks. The physical act of protein digestion begins in the mouth, when the food containing the protein is chewed into smaller pieces. The chemical process of protein digestion begins when the food enters the stomach, and it is this part of the process that enables the protein to be broken down into molecules the body can use.

When food enters the mouth, it is broken down physically by the act of chewing. Some foods that contain a high amount of protein to be digested include meat, eggs, nuts, and dairy. The food mixes with saliva in the mouth, which aids its travel down the esophagus. Between the esophagus and the stomach is a valve called a sphincter, and when the food travels through that valve, the chemical process of protein digestion begins.

During the chemical process of protein digestion, hydrochloric acid, along with enzymes known as pepsins, mix with the protein molecules and break the bonds that hold the molecules together. Once these bonds are broken, through a process known as hydrolysis, the proteins are close to becoming the essential amino acids needed by the body. The process of protein digestion in the stomach can take up to four hours, but there are a variety of factors that may affect the amount of time it takes.

Once digestion in the stomach is complete, the nearly broken-down proteins move through the duodenum into the small intestine. At this point, the pancreas finishes the protein breakdown by releasing an enzyme called trypsin. Once this final breakdown is completed, the amino acids move through the wall in the small intestine into small capillaries. The digested protein, or amino acids, travels through the liver before entering the main bloodstream. The amino acids then travel throughout the entire body to the organs that most need to be replenished.

If the body has too much protein and it cannot all be digested and absorbed into the bloodstream, the remainder will continue through the large intestine and travel through the kidneys. At this point, it is converted into a waste product known as urea. It is then discharged from the body in the urine.

WATER

Water has a number of important jobs throughout the body, including the ability to lubricate joints, deliver oxygen through the blood, keep skin healthy, regulate body temperature, help the digestive system work, flush away bodily wastes, maintain blood pressure and more. Drinking enough fluids and eating foods high in water content can ensure you keep a healthy body water percentage. If you're sick, you might need even more water.

Consumed beverages also are used to create mucus and saliva. Most people produce 2 pints of saliva a day, which is enough to fill two soda cans. Once the body has completed the water digestion it needs to function efficiently, it starts eliminating the excess. However, just a small percentage of the water you drink, approximately 20 percent, on average, ever makes it to the bladder.

A healthy bladder will usually hold about 1 to 1 1/2 cups of urine before the urge to urinate is signaled. Healthy adults pass about a quart and a half of urine through the bladder and out of the body each day, according to the National Institute on Aging. If you feel the need to go — do it. The muscles of an overfilled bladder can be weakened, and holding your bladder may contribute to urinary tract infections. Additionally, perspiration and respiration — otherwise known as sweating and breathing — account for about 21 ounces a day each.

Safe, clean water is critical for your good health and this podcast is going to article focuses on the importance of water in the digestive system and discusses some of the digestive ailments that can arise with chronic dehydration.

The cornerstone for functioning of the entire body is the digestive system, and water plays an important part in correct digestion. Digestion supplies the energy for your body. Without enough energy the organs throughout the body don't function correctly, you may feel fatigued, you may be in a brain fog and you could experience memory loss, just to mention a few of the more minor problems.

One of the most important factors in digestion is the acidity of the food you are digesting. In general, the stomach requires a certain amount of acidity in order to get the digestive process going. The small intestine requires alkalinity in order to allow the friendly bacteria and digestive enzymes to work, and the large intestine requires acidity to stimulate the bowels to eliminate the waste food products.

Let's take a closer look at each of these three functions…

The stomach needs water in two important ways that are related to hydrochloric acid. First, water in the body is required to produce hydrochloric acid itself at the proper ph. This may seem a little counter intuitive, but keep in mind that in this case the water is not actually in the stomach at the same time as the hydrochloric acid. It's in the body when the hydrochloric acid is created. The ph of the acid in the stomach must be in the neighborhood of 3 for digestion to start, but that's too acidic for the tissue of the stomach… and that brings us to the second important function of water… producing the mucous stomach lining.

Without this mucous lining, the hydrochloric acid comes into direct contact with the stomach tissue resulting in stomach ulcers… and if you've ever had an ulcer you know that's not a pleasant thing.

Dehydration results in a stomach acid that is insufficiently acidic. When the contents of the stomach are not acidic enough a little valve called the pylorus does not open and the contents of

the stomach don't pass from the stomach into the duodenum. The stomach really wants to get rid of its contents so it tries moving it in the other direction… namely up into the esophagus. Even though the stomach contents are not acidic enough, they are still acidic and that acid burns the esophagus producing heartburn. Think of all the pharmaceutical drugs for heartburn and indigestion that could be eliminated just by drinking enough water.

The pylorus eventually does let the stomach contents pass, even though they are not acidic enough. But, since the contents are not sufficiently acidic, they will not properly trigger the release of pancreatic enzymes and bile. Without those two substances the contents stay acidic as they pass through the small intestine instead of being converted into an alkaline state. Unfortunately, the good digestive bacteria that like an alkaline state and don't function in the acidic environment so, in essence, the food does not properly digest. That means you don't get the nutrients that you need and, of course, without proper nutrition the body suffers.

Normally, in the process of doing their job, the friendly digestive bacteria in the small intestine convert the digested food back into an acidic state for the large intestine. Without enough stomach acidity, the small intestine's bacteria don't completely digest the food. Instead, it passes to the large intestine with undigested particles… but something else that's very bad also happens.

In an effort to conserve water, the body extracts water from the partially digested food. That leaves half-digested, dry stool of the wrong ph in the large intestine and causes constipation. In fact, if you regularly have hard dry stool in your bowel movements, you can bet you aren't drinking enough pure water.

To sum it up, lack of water in the digestive system can result in ulcers, indigestion, heartburn, fatigue, brain fog, memory loss, improper function of any of the organs, partial digestion, and constipation.

You've got to drink plenty of safe, clean water every day and it's doubtful you are getting that kind of water from your city, your well, or bottled water.

This is the processes of the digestion of what Amanda ate at Solomon's gathering.