

A LESSON IN DIGESTION

Digestion takes more energy than any other bodily function. The stages of digestion start in the mouth and continue until evacuation of the waste. Digestion is closely related to metabolism. In other words, if your digestion works well, so does your metabolism. If your metabolism is sluggish, your digestion is impaired.

The Mosby Medical Encyclopedia defines metabolism as "...the sum of all chemical processes that take place in the body as they relate to the movement of nutrients in the blood after digestion, resulting in growth, energy, release of wastes, and other body functions."

These are related because digestion is the chemical process of breaking down food in order to separate and utilize the nutrients from the food. First we will explore each major stage of digestion.

Mouth – Here the food is chewed, broken down and mixed with saliva. The salivary glands excrete saliva, which is full of the digestive enzyme amylase. This is the enzyme responsible for the breakdown of starch. It is interesting to note that past research in Japan has shown that thick saliva has notably fewer enzymes than thin, watery saliva.

Stomach – Swallowing stimulates peristalsis of the esophagus. Peristalsis is the wave-like motion of the muscles, which will move food from the mouth into the stomach. In the stomach, hydrochloric acid activates pepsinogen that breaks down protein. The stomach's acidity inhibits further carb breakdown to allow protein digestion. (Make a mental note of this.) From the stomach, food is moved to the small intestine.

Small Intestine – The small intestine is approximately 23 feet long. Many consider this to be the most important stage of digestion since this is where the majority of nutrients get absorbed into the bloodstream. Intestinal enzymes are produced that complete digestion of proteins and sugars. Fats are only digested in small intestine from bile produced by liver.

Liver – Bile is produced by the liver and is responsible for the digesting and absorption of fats, including the essential fatty acids. The bile is critical for the absorption of fat-soluble vitamins.

The other important role of bile is to carry out waste products including bilirubin. This bile is supposed to be eliminated as it is mixed in with the feces.

Clinically, it is noted that approximately 95% of the bile acids (the toxic bile) are absorbed back into the blood. It is then noted that in a healthy liver, very little escapes back into circulation – without noting what this “knowledge” is based on.

It is also noted that a diseased liver will allow re-circulation of the toxic bile. However there is no research that proves it was the diseased liver that allowed the re-circulation. Therefore, it could be that the improper elimination may cause the liver disease in the first place.

Pancreas - The pancreas secretes digestive enzymes to the small intestine and produces the hormones insulin and glucagons, which regulate blood glucose levels.

It is important to consider each stage of digestion and to note that overall – it is digestion is weak. What I mean is that it does take a lot of energy to work properly.

If one stage doesn't work, the whole process is weakened. So, if the food is not broken down in the mouth, it cannot be broken down in the stomach, small intestine and so on.

As it was stated earlier, the stomach's acidity stops further breakdown of the starches. This is again why it's important to chew your food completely. As food enters the stomach, it is prepared to break down proteins only, as the amylase from the mouth should have completed (or nearly completed) its job.

CYCLES OF DIGESTION

Digestion is a circadian rhythm. Much like our other circadian rhythms, or cycles, it is not easily altered.

Morning – In the morning from approximately 4am to around 12 noon, our bodies are emulsifying fats and digesting.

Noon – This is peak digestion time. Your digestive ability will be strongest here and slowly decline over the rest of the day.

Evening – From around 8 pm on, your digestion will be slower. Your body is done breaking down food and should now be assimilating the nutrients.

Eating according to your body's natural cycles will help strengthen your body's natural digestion. You will find the section entitled "Enzymes" to learn how to do this.

DIGESTION OF FOODS

Carbohydrates with Starches – Carbohydrates that contain starches are broken down into simpler molecules in two steps. First, they are broken down into maltose by enzymes secreted by the salivary glands and pancreas. Maltose is then broken down by an enzyme in the lining of the small intestine, which breaks these molecules down further so they can be absorbed into the blood. This stage cannot happen if the first stages don't happen.

Carbohydrates without Starches – These are mainly fruits and vegetables. These carbs are broken down mainly by the enzymes of the mouth, with less emphasis on the carbohydrate breakdown.

Protein – Proteins in meats, eggs and beans must be broken down in the stomach juices. The nutrients cannot be utilized until these molecules are broken down. Once digested in the stomach, the small intestine can absorb the nutrients into the blood stream.

Fats – Fats are broken down in the small intestine by bile acids produced and secreted by the liver.

FOOD COMBINING

Food combining has been known and practiced by medical professionals as early as the 1900's. However, as with anything "natural," it was dropped in lieu of medicine. It was believed by many that with the advancement of medical technology, less care of the body was needed.

One important principle of food combining is eating mostly foods that contain 70-80% water since our bodies are comprised of that much water. These are mainly fresh, whole fruits and vegetables.

Don't confuse this with drinking water. Many people who drink enough water are still dehydrated on a "cellular" level. You can see it in dry skin and hair. This is because even though water is drunk, the cells cannot absorb moisture. I believe this is due to lack of nutrients. Drinking "enhanced" water will not help much because the cells usually cannot absorb what the water is enhanced with. It's best to stick with fresh fruits and veggies that the body recognizes. These have the nutrients needed by the body to help pass liquid into our cells.

If you read the brief overview of digestion, you can see how food combining may be necessary to at least regulate the system for a period of time. It can also be used to reset or give your digestion a much-needed rest.

Note that in the stomach, carbohydrate digestion is stopped. This means that if the starch isn't broken down in the mouth, it will pass to the stomach then pass to the small intestine while incompletely digested. The enzymes here can only break down maltose, the smaller enzymes that were supposed to be created in the mouth while chewing. If the larger molecules of the starch are sent to the small intestine, there is no saliva to further break it down into maltose.

In addition, the stomach acids can only break down a certain amount of protein at a time. Knowing the cycles of digestion, we can denote that if we eat too much protein, the digestive cycle cannot complete its job. Therefore, the following general rules are used to make food combining easy:

Food Combining Rules:

- Don't overeat. Immediately stop when you feel full.
- During proper food combining you should eat fruits alone. Fruits have very high water content and should be eaten in the morning to enhance the natural flushing cycle of the body. Eat fruits on an empty stomach, but no more than two or three different kinds at once. Also, melons should be eaten alone as they have the highest water content and will move through your system the quickest.
- Don't eat meat and starch combinations. Chicken, beef and fish all count as meat. Starch will include all breads and types of breads, cereals, rice, oats, potatoes, corn and beans. Eat meats or starches with any veggies you like.
- What you can have is meat with salad and steamed veggies, or starch with salad and steamed or cooked veggies.
- Meats or proteins should never be mixed. Choose one per meal.
- When eating meat, your serving should be the size of your palm. This will ensure you don't overeat.
- Starches can be mixed, but preferable no more than two. It is almost always recommended to consume starches with veggies to ensure they move through your system efficiently.

How to Strengthen Your Body's Own Enzymes

The enzyme supplement industry has grown immensely in the past decade. Enzyme therapy can be a useful tool in the healing process for many ailments. But there is another approach that many have found useful in healing – it's strengthening your bodies' own ability to create enzymes.

Enzymes are still theoretical in how they work, but one thing is known – that they do work. It is this not knowing exactly how they work that creates many different enzyme products and ways to use them.

I have worked with hundreds of people that were using enzymes to help their digestion. They did a lot of good while nausea and gas were reduced and digestion felt all around better. The problem was that many of these people felt they were addicted to the enzymes only to be a slave to them for the rest of their lives. The following program is what was used to help the client wean off of enzyme supplements and in turn help their bodies' to become stronger on it's own. The program is summed up in three basic steps...

- The days of filling up on a big breakfast of fatty foods and starches are gone since we know this makes us sluggish. Your body is basically “cleansing” itself in the morning. Your liver is burning fats and your body is attempting to dump waste. After your morning glass of fresh water, fruit is the best thing to help your body's morning flushing process. Have one or two pieces of fruit either for breakfast or at least 30 minutes before eating protein.
- Your enzymes weren't active this morning since it was flushing time. They are on a steady rise to functioning at their strongest around noontime. This is a natural circadian rhythm that can get mixed up just like the hormonal rhythm. To help your body restore its natural noontime strength, eat a raw veggie salad for lunch every day for at least a week. Add a handful of sprouts or beans for protein. If you prefer, have animal protein – but no larger than the size of your palm.
- After this lunchtime, your body's digestion and metabolism are on a slow and steady decline. By dinnertime, your digestion has slowed, as your body is getting ready for rest. So have steamed veggies for your evening meal, which are easier to digest.

- The lunch and dinner veggies are important. Many people believe they are full of digestive enzymes. If this were so, people would be able to eat raw veggies any time without problems. But the reality is that many people feel the effects of eating too many raw veggies when their system isn't ready for it – gas, bloating and even discomfort.

I believe that eating your foods in the above manner helps your body to rebuild it's own digestive enzymes. I have seen this method work time and again to help people make their own bodies stronger, and in some cases, even transitioning to an all-raw diet while keeping the discomfort at bay.

This doesn't mean that enzyme therapy isn't useful because it is, otherwise it wouldn't be so popular. However there is another way that many are unaware of. No matter what your health program is, keep the following rule in mind; when you work against your body's natural rhythms or replace your body's natural functions, you make it weaker - when you work with the body's natural rhythms, you make it stronger.