

Digestion: Your key to good health

Question: What is supposed to happen when you eat food?

by Marilyn Sidwell Jones



In the Beginning ...

"They" say you are supposed to gather as a happy family to enjoy your meal. I know - that rarely happens. It is difficult to leave worries and disputes at the door. But emotions at mealtime are very important. You can have a dramatic effect on successful digestion with a peaceful setting, a happy or a meditative mood.

Do you remember your mother telling you to 'slow down and chew your food'?

Chewing your food is the first 'key' step in the digestion of food.. Enjoy the textures and aromas presented by food. Chewing mixes food with saliva, which contains enzymes that start carbohydrate digestion. Chewing breaks food into small pieces. This oral phase of digestion, with its smells and tangs, stimulates the stomach and pancreas to prepare for the next step in digestion.

When you swallow food you keep it in your stomach for an hour or two. A healthy stomach should drop to a pH of about two. The stomach mixes the food with hydrochloric acid and pepsin. The result is called chyme. This mixing begins the process of digesting proteins. The carbohydrate digestion that began in the mouth is stopped by the acid. The stomach acid helps defend the body against any unwanted harmful bacteria that arrived with the food.

After an hour or two the stomach contents feed into the duodenum, the first part of the small intestine. Secretions of bicarbonate from the pancreas buffer the acid contents. The pancreas also secretes pancreatic enzymes. These digest carbohydrates, protein and fats. The liver secretes bile salts, which emulsifies the fats to aid in their absorption. The bile salts are stored in the gallbladder until they are needed.

Peristalsis is a phenomenon whereby the food is propelled along the gastro-intestinal (GI) tract. The small intestine contains small finger-like projections called villi. Carbohydrates, proteins, water-soluble vitamins, and minerals are absorbed from the GI tract by the villi during this process. The minerals are transported across the GI tract at specific sites, and their absorption is pH dependent. Vitamin D facilitates calcium absorption.

Fat-soluble nutrients and fat, using the bile salts, are absorbed in the last third of the small intestine, the ileum. Next, everything is propelled into the colon where it is acted upon by intestinal bacteria. Bacteria in the intestines play a major role in the body's defense. In fact, the normal flora and fauna of the GI tract fulfill many useful functions. Bacteria break down any undigested molecules. GI bacteria stimulate cell growth. They repress the growth of harmful organisms. All of this trains your immune system to respond only to pathogens, and promotes the body's defense against many diseases. Fluid is absorbed at this stage. The contents are thus concentrated and finally excreted from the body.

... In a nutshell

A healthy digestive system depends on proper operation at each phase. Yes, proper food choices are important. At the same time, food must be digested and absorbed from the GI tract into the body. Then the products of digestion must be transported to the appropriate working sites (cells). During the next step molecules must be picked up by the cells, used by them and properly excreted from them. Debris is next picked up to be excreted. Proper excretion varies, depending on whether debris is exhaled by the lungs, sweated out thru the skin, sent out via urine or excreted from the colon.

... When things go wrong (and they probably will)

You know things can and do go wrong with any and all phases of digestion. What follows is a greatly simplified description of problems and solutions. Are burping, heartburn, flatulence, constipation or diarrhea normal? NO!

What happens when things go wrong?

People enjoying the typical Western diet are famous for making poor food choices. That is one (very serious) problem. Unfortunately these food choices often include foods which **cause** GI distress. Older people as a group do not chew well. Busy people have a bad habit of bolting their food as fast as possible. These 'events' start a cascade of malfunctions.

Your Stomach and GERDs

Older folks and very allergic people are likely to have very little stomach acid. One consequence of a deficiency of stomach acid is acid reflux. *That's right.* Acid reflux or GERDS is more likely a result of too little rather than too much stomach acid. The symptoms of too much and too little stomach acid are **identical**. There is an easy way for you to test whether you have too much or too little stomach acid. Add 1 tablespoon of apple cider vinegar to an 8 oz glass of water. Sip it with your meal. If you have pain, stop drinking. But, if the small amount of acid helps, you probably are low in hydrochloric acid. Low stomach acid results in food remaining in the stomach well beyond the normal 2 hour stomach-emptying time. When you lay down, the slightly acid stomach contents seep through the sphincter at the top of the stomach and creep up the slightly alkaline esophagus. And that really BURNS.

Ginger is very helpful if you have GERDs. It relaxes the sphincter at the bottom of the stomach, thus allowing the stomach to empty. Ginger has the additional benefit of increasing peristalsis along the entire GI tract. This benefit of ginger minimizes the likelihood that the contents will collect in pockets and folds, putrefy and cause gas.

Your Stomach and Ulcers

You have another potential problem when the stomach does not produce enough acid. You could get a duodenal ulcer. As noted above, food leaving the stomach goes into the duodenal area. Normally low pH of the contents challenges the pancreas to secrete buffering bicarbonate. If the chime is the wrong pH this 'challenge' does not take place. Hence, you have a fertile area for acid to cause ulcers. For these reasons we recommend **Enzymes Plus**. It adds acid for your stomach. It also adds support for the rest of the digestive breakdown steps.

The Vilus needs protection

Food is propelled along to the small intestine, then on to the large intestine. The small villi GI tract have the task of picking up the various digested nutrient molecules: carbohydrates, amino acids, minerals and fats. But what if the villi are damaged?

A better question might be: What can damage the villi so they don't do their job?

Inflammation of the villi - from any cause - will have a bad effect on this phase of the digestive process.. Some common causes of damage to the villi are diarrhea, parasites, tropical sprue, inflammatory bowel disease, gastro enteritis, celiac disease, crohn's disease, intolerance to any number of foods, Diabetes mellitis, malnutrition and fiber deficiency. *There is more!* There are many more causes.

The damage to intestinal mucosa and villi results in - **wait for it** - malnutrition.

Malnutrition is very possible if the nutrients fail to cross from the GI tract into the blood stream. If they successfully cross this first barrier, the molecules need to be transported to the various sites of action where the body does its work. This is why we rely so heavily on **Ultra Vites**. The minerals are 'smuggled' into the

body as amino acids (chelates) and the B-Vitamins are already in their active forms. In other words, once your body heat dissolves the capsule, the nutrients are available for pick up, and ready for use.

The next step, after the molecules are transported across, can also be problematic. The mechanisms the body uses to transport nutrients are very exact. Specific carriers are needed to transport a mineral, such as iron, to the site of action by the cells. This is a very technical and very important phase of the transport process. Nutritional deficiencies can be traced to malfunctions of delivery. But, after delivery to the cell, a particular molecule must cross the cell wall, and its waste products must be picked up for transport for excretion.

Fats & Fatty Acids

What is all the noise about 'essential' fatty acids? The body will use whatever fats you give it for one of its major functions: the building of cell walls. If you give it the wrong building materials the cell will not function correctly to take up nutrients and expel waste. The fish oil and black currant seed oil in **Ultra Omega Liniic** provide the correct fatty acid molecules needed to build the cells so they function properly.

Probiotics

We have written a lot about the need for probiotics. The 'helpful' bacteria that live in your GI tract are susceptible to a number of damaging events. *Did you know* that the herbicides used on GM foods, will kill your gut bacteria (even though Monsanto has 'proven' that its Roundup does not harm humans)? *Did you know* that anti-biotics will kill both bad and helpful bacteria in the GI tract? *Did you know* that constipation and diarrhea are both signs that your intestinal organisms are dying? The lack of 'good' bacteria in the GI tract points towards Autoimmune disease, Non-Alcoholic fatty liver disease, Parkinson's disease - and many other 'popular' health problems.

The **Ultra 4x6 Probiotic** formula has the following benefits:

- Lactobacillus acidophilus DDS-1 is the studied and patented organism that is stomach acid and bile resistant. It has been shown to inhibit Heliobacter pylori - and has many other proven benefits.
- Lactobacillus paracasei is found mostly in the small intestine. One of its benefits is that it improves immune function.
- Lactobacillus bulgaricus helps with the digestion of dairy products. It also has anti-cancer properties.
- Streptococcus thermophilus is particularly helpful in easing the symptoms of lactose intolerance.
- Bifidobacterium bifidum is found in the intestines in large numbers. It helps detoxify the intestines and promotes regular bowel movements.
- Bifidobacterium longum inhibits the growth of harmful bacteria. It prevents diarrhea and aids in cancer prevention.
- Inulin is a prebiotic. It is a naturally-occurring polysaccharide that is resistant to digestion. Inulin promotes the colonization of beneficial bacteria. They help maintain the mucosa barrier in the GI tract.

Prevent many 'modern' ailments

We offer a number of Natural Solutions (alternatives to OTC remedies) that benefit your digestion - and your overall health.

1. Enzymes Plus is a digestive aid that will benefit all phases of the digestive process
2. Ultra Vites is a doctor formulated complete and effective multi with active B Vitamins
3. Ultra Omega Liniic provides the essential, pre formed, long chain, poly unsaturated fatty acids
4. Ultra 4x6 Probiotic provides the 'good' bacteria that are necessary to your overall health.
5. Ginger shortens stomach emptying time, thereby relieves GERDS. It also promotes peristalsis, the movement of food from the stomach to the colon.

*These statements have not been evaluated by the Food and Drug Administration.
The products are not intended to diagnose, treat, cure, or prevent any disease*



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