

Respecting Your Digestive System - Part 1

~ by Caroline Barringer NTP, CHFS, FES

Would you believe it takes a mixture of seven to eight liters of saliva, digestive juices, acids and enzymes to digest a single meal?

So many of us take our digestive processes for granted, not realizing that the proper function of this amazing mechanism literally determines whether we live or die.

In my lectures I often give the example that a human being can survive with little to no brain function (with respiratory aid from modern life support machines and nourishment from feeding tubes), but if we cannot optimally digest and assimilate nutrients, we would not be able to survive for very long at all. The Central Nervous System (CNS), along with every other cell, tissue, organ and system is nourished by the Enteric Nervous System (ENS) or the "abdominal brain" (mainly the intestines). I believe if each of us were to understand the function *AND* dysfunction of our digestive systems, we would be much more conscientious of what, when and how we feed ourselves and our families.

In PART ONE of "Respecting Your Digestive System" we will focus on the benefits of proper digestive function. PART TWO of this article will follow in our next newsletter and will focus on the symptoms that arise from the *dysfunction* of digestion along with helpful tips to easily restore balance to your digestive tract.

The FUNCTION of Digestion (general overview)

The goal of digestion is to break down food into the smallest, most usable forms of nutrients (glucose, amino acids, fatty acids, etc.) to provide energy and building blocks for our bodies. Digestion begins in the brain when we see or smell food. As we start to eat, the chewing mechanism alerts the body to prepare for incoming nutrients. Hormones such as gastrin, secretin, and cholecystokinin (among others) start sending out messages to the main organs of digestion - the stomach, liver/gallbladder and pancreas - to prepare them for their digestive duties.

Carbohydrate digestion begins in the mouth with the secretion of an enzyme called salivary amylase. Therefore, when eating pasta, bread, fruit or any other carbohydrate, it is imperative that we chew and insalivate these foods completely to assimilate them properly. All carbohydrates break down into glucose, the main food of the brain and a fast-burning energy source for cells. **Protein digestion** takes place in the presence of hydrochloric acid and pepsin in **the stomach** to break down the proteins (chains of amino acids) into single amino acids for building muscle, tissue and bone. Hydrochloric acid also serves as a disinfectant to neutralize food-borne pathogens before they enter the intestines and bloodstream. **Fat digestion** takes place in the first part of the small intestines called the **duodenum**. Bile from the **liver/gallbladder** travels down the common bile duct into the duodenum to emulsify the fat molecules into usable fatty acids. These fatty acids nourish EVERY cell membrane in the human body and are necessary for healthy hormone production and are a long-lasting energy source for our cells. The **pancreas** is responsible for bicarbonate production to alkalize the highly acidified/digested food (now in a liquid form called "chyme"). The pancreas, sharing the common bile duct with the liver/gallbladder, also sends out many end-stage digestive enzymes such as lipase to finish digesting fats, protease to finish digesting proteins and amylase to finish digesting carbohydrates. Now the alkaline chyme is ready to be absorbed into the blood and the lymph system via the second and third parts of the **small intestines** called the jejunum and the ileum. Fatty acids go into the lymph. Glucose, amino acids, vitamins and minerals go into the bloodstream to be transported wherever these nutrients are most needed. The **large intestines** or the **colon** (ascending, transverse, descending and sigmoid colon) has the job of absorbing remaining nutrients and recycling saliva, water, digestive juices, acids and enzymes. Waste is now formed into feces then eliminated. *A special note about the colon...* The colon does not receive nutrients from the bloodstream, therefore the beneficial bacteria (probiotics) colonizing in the mucosal lining provide the large intestines with necessary nutrients to stay healthy. Probiotics should be replenished on a consistent basis through cultured foods and probiotic supplements - especially after antibiotic use - to restore balance to the colon.

And there you have it - the basic function of the human digestive tract! Everything I just described should occur within 21 to 24 hours per each meal consumed. Pretty amazing, isn't it? It's no mystery that our modern lifestyles and the choices we make each day - eating processed, devitalized, adulterated foods, eating on the go under stressful conditions, drinking soda, alcohol and juice instead of water, sleeping too little and eating too much - have a grave effect upon digestion. Additionally, we must not forget the harmful effects that negative emotions have on our bodies. The "gut brain" is easily disrupted by unresolved emotions.

Stay tuned for [PART 2 - The Dysfunction of Digestion](#) - in our next newsletter. Acid reflux, excess gas, bloating, parasite invasion, constipation and/or diarrhea, H. pylori infection (ulcer-causing bacteria), ulcerative colitis, diverticulitis, IBS, Crohn's, and chronic breast tenderness are all signs of a compromised digestive system. By understanding the function *and* dysfunction of digestion, we will all be able to develop a deeper respect for the life-giving process of digestion - a respect it so well deserves!