



IMAGE AWARENESS WELLNESS INSTITUTE

Digestion

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OVERVIEW

Digestion is the front door to the house of nutrition. No matter how nutritious the food one consumes is, it will mean nothing if the body is unable to break the food down into the simple forms of nutrients the body is capable of using. Everything vital for life with the exception of oxygen enters the body through the digestive tract.

Digestion begins in the mouth with chewing which accomplishes the task of breaking food down mechanically and also mixing it with digestive enzymes.

Food then moves to the stomach where powerful digestive enzymes are released. These enzymes eradicate potential infectious organisms, break down protein molecules, and prepare minerals for absorption.

Food moves from the stomach to the small intestine. Here additional digestive enzymes are released by the pancreas. The pancreas also releases bicarbonates to neutralize stomach acid and insulin to enable proper metabolism of glucose. Bile is also secreted from the gall bladder into the small intestine.

Finally food moves to the large intestine or colon. The colon extracts the water from food. The colon is also host to beneficial bacteria which synthesize many nutrients important for health. These beneficial bacteria also

protect the body from invasion by harmful organisms. Fiber is important for maintaining optimal health of the colon.

The digestive tract is both a supply line for essential nutrients and also a discharge line for elimination of wastes. Disruption of these two vital processes can have serious consequences. The cells of the body can live longer without nutrients than they can without removal of wastes. Both processes are equally important.

SERIOUS PROBLEMS

Many serious health conditions begin with faulty digestion. Medical offices are filled with those who suffer with colitis, Crohn's disease, diverticulosis, gastroesophageal reflux disease (GERD), hemorrhoids, ulcers, irritable bowel disease (IBD), stomach

and colorectal cancer.

Millions of prescriptions are written for antacids every year. A Canadian study in the 1980's found that over half the population of Canadians studies had taken antacids in the previous 6 months and over 10% took them daily. Antacid sales are a primary profit center of the pharmaceutical industry in spite of the fact that there is little physiological basis for this widespread use of antacids.

STOMACH ACID & BETAGEST

The stomach is one of the hardest working organs in the human body. Each day the stomach releases about 2 liters (a little over 2 quarts) of digestive substances. Production and regulation of the extremely powerful hydrochloric acid by the stomach requires a great deal of energy. The stomach lining ranks with the heart and brain as the most energy demanding tissues in the human body.

Lack of stomach acid results in a number of dire consequences. Nutrients which require stomach acid for absorption include calcium, magnesium, phosphorus, iron, and vitamin B12.

A protein called intrinsic factor must bind with vitamin B12 for the absorption of the vitamin. This binding of vitamin B12 and intrinsic factor can only take place in an acid envi-





ronment.

An acid environment in the stomach is also essential for digestion of protein. Hydrochloric acid is essential for activation of pepsin, one of the stomach's most important enzymes involved in the breakdown of protein. A good part of the digestion of protein is accomplished by pepsin and protein digesting enzymes (proteases) secreted by the stomach.

Hydrochloric acid production begins to decline around age 30. By the age of 70 about one-third of the population suffers with serious decline in stomach acid. Symptoms can be aggravated by overeating, alcohol consumption, and habitual use of antacids. Most older people think that digestive problems originate with too much acid in the stomach because they have learned what they know about the digestive process from television commercials rather than from textbooks on physiology.

Lack of hydrochloric acid is a contributing factor to a number of age-related problems including bone loss (calcium deficiency), loss of energy (magnesium deficiency), and anemia (iron deficiency).

The important role of hydrochloric acid in killing harmful bacteria is very important and often overlooked. Food is often contaminated with potentially harmful and dangerous bacteria and

fungi. The hydrochloric acid in the stomach kills these organisms, protecting the rest of the digestive tract from harm.

In addition, the hydrochloric acid in the stomach prevents bacteria in the small intestine and colon from traveling up the digestive tract. Overgrowth of bacteria in the stomach can take place if hydrochloric acid is lacking or is neutralized by antacids.

Betagest is a supplement designed to support digestion in the stomach. The supplement contains betaine hydrochloride, a substance found naturally in the stems and roots of beets, for hydrochloric acid support, lactase to improve digestion of lactose or milk sugars, and acid-activated proteases including papain from papaya to aid in digestion of protein.

All enzymes in Betagest are 100% plant-sourced. The hydrochloric acid is released at a "controlled" rate similar to natural stomach acid secretion increasing safety and tolerance of the supplement.

SMALL INTESTINE & ENZYME DIGESTIVE AID

The process of breakdown of food is more or less completed in the small intestine. The key actor in the small intestinal digestive process is the pancreas. This organ produces three kinds of enzymes. Proteases convert protein into amino acids, amylases convert carbohydrates into simple sugars, and lipases break down fats into fatty acids.

Enzyme deficiencies can result from overeating, poor diets with inadequate nutrient intake, foods high in enzyme inhibitors, and from highly processed and overcooked foods. There is a natural decline in enzyme production as we age just as there is with hydrochloric acid.

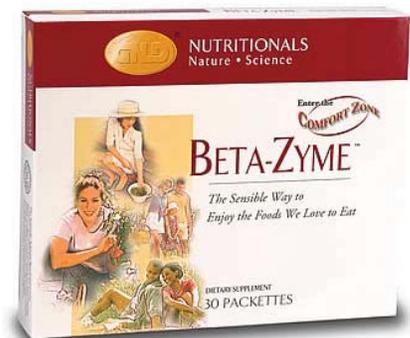
Large meals can overwhelm digestive capacity. This is particularly

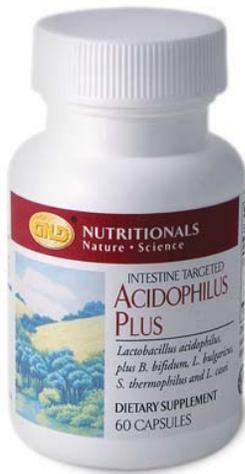
so if the meals are cooked. Cooking destroys the enzymes found in foods. Most raw foods contain enzymes which contribute to the digestive process. Seeds often contain digestive inhibitors making them difficult to digest unless they are sprouted.

Incomplete digestion of food creates a double peril. Firstly, the body begins to starve due to inadequate nutrient intake. Secondly, incompletely digested food contributes to a phenomenon known as macromolecular absorption. This is a situation where incompletely digested food particles begin to enter the blood stream. This contributes to the development of allergies and sensitivities to various foods. Immune reactivity to foods can result in a wide range of physical and emotional symptoms.

Enzyme Digestive Aid is a supplement which contains plant-derived enzymes with a broad range of digestive capacity for fats, proteins and carbohydrates. These enzymes are active in the wide range of pH ranges normally found in the small intestine. Diastase from malt is added to enhance carbohydrate digestion and papain from papaya is added to augment protein digestion.

Enzyme digestive aid also contains bile salts and dehydrocholic acid to keep lipids in solution. This is an important digestive support for anyone who has had the gall bladder removed. Support for fat digestion is





vitaly important for those who have experienced gallbladder surgery. It helps prevent deficiencies of essential fatty acids and fat soluble vitamins.

GNDL Enzyme Digestive Aid is based upon Targeted Delivery Technology. Tablets have a special coating which provides protection from the harsh acid environment of the stomach. Multiple coatings are required for optimal functioning of this technology.

BETA-ZYME: BEST OF BOTH WORLDS

Beta-Zyme is the best of both worlds. The supplement contains two Betagest and three Enzyme Digestive Aid tablets in one package. These are the quantities of the supplements commonly used by many people who are seeking to improve their digestion.

THE COLON: ACIDOPHILUS PLUS

Over 400 different kinds of bacteria live in the colon. The beneficial bacteria convert naturally occurring sugars into lactic acid which promotes a more stable and balanced intestinal environment.

Beneficial bacteria can make the following contributions to intestinal health:

- They produce lactic acid which

increases the acidity of the intestines inhibiting harmful bacteria and fungi.

- They decrease production of a number of carcinogenic metabolites.
- They aid absorption of minerals, especially calcium.
- They feed on lactose to which many people are intolerant converting it into lactic acid.
- They produce a wide variety of antibiotic substances such as acidophilin and bacterocidin to inhibit other bacteria which are harmful.
- They produce a variety of nutrients including B-Complex vitamins and vitamin K.
- They act as barriers to prevent pathogenic bacteria from colonizing the intestines.

The beneficial organisms in Acidophilus Plus include *Bifidobacterium bifidum*, *Lactobacillus acidophilus*, *Lactobacillus casei*, *Lactobacillus bulgaricus*, and *Streptococcus thermophilus*. Streptococcus refers to the shape of the bacterial family (*strept* (“twisted”) and *coccus* (“round”). Each of these organisms makes a special contribution to intestinal health by producing special enzymes, detoxifying different substances, and colonizing different territories in the intestines.

As evidence of the significance of beneficial bacteria, a study was conducted in which only 10 Salmonella bacteria were required to kill a guinea pig with inadequate intestinal flora. A trillion salmonella were required to kill guinea pigs when the intestine was populated with the full contingent of beneficial bacteria. It is difficult to overestimate the benefit of enjoying a full host of beneficial bacteria populating the colon.

ALL NATURAL FIBER BLEND

The average person consumes only half the dietary fiber needed for long term good health. Increasing the intake of fiber promotes normal elimination without the use of habit-forming laxatives. Increasing fiber intake has the added benefit of increasing the sensation of fullness at mealtime promoting safe and natural weight loss.

All Natural Fiber Food and Drink Mix is a combination of 12 natural, whole-food sources of fiber including grains, fruits, and vegetables. The supplement includes psyllium seed, soy fiber, whole oat fiber, acerola fiber, pea fiber, apple fiber, banana fiber, guar gum, prune powder, almond powder, apricot powder, lecithin, maltodextrin, and whey powder.

We normally think of fiber as a single entity, but there are actually a variety of kinds of fiber. This supplement provides all five categories of dietary fiber which are considered important: cellulose, hemicellulose, gum, lignin, and pectin. A single serving provides 8 grams of dietary fiber.

All Natural Fiber contains an exclusive ingredient called Neo-Polyfibe, a combination of the cellular matrix of the heart of the soybean along with whole oat and acerola cherry fiber. This component is designed to absorb cholesterol and carry it out of the body without stealing trace nutrients as is typical with some other forms of fiber. All Natural Fiber can be mixed with water or added to favorite drinks and recipes.

ALFALFA PLUS FIBER

Alfalfa has traditionally been used as food in the form of flour or sprouts.

Alfalfa Plus Fiber is a broad spectrum supplement with 400 milligrams of fiber in each tablet. Alfalfa has been used for its nutritional benefits



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to humans and animals since before recorded history.

Alfalfa is a rich store of nutrients. It contains not only a blend of different kinds of fiber, but also phytonutrients including carotenoids. Alfalfa also contains chlorophyll, vitamin E, Vitamin K, all the water soluble vitamins including B complex and vitamin C. Alfalfa is naturally a rich source of trace minerals, but GNLD fortifies this supplement with its exclusive Custom Trace Mineral Blend which is rich in trace minerals from the sea. The rare trace minerals found in alfalfa can be difficult to obtain in the average diet. Alfalfa is one of the most complete plant foods in the human food chain.

The rich mineral content of alfalfa is due to the vigorous root growth of the plant. When plants are a month old the tops are only half an inch high, but the taproots are already 5 to 6 inches long. By the time plants are 15 inches tall the roots reach down 5.5 feet into the soil. Two year old alfalfa plants can have roots that reach into the soil 12 feet or more. Roots of mature plants can reach depths of 20 feet or more. These deep roots draw rare trace minerals to the surface

where they are incorporated into the foliage of the alfalfa plants.

Alfalfa plus fiber is derived from alfalfa which is grown without the use of pesticides and tested for any possible residues in the final product. The alfalfa is harvested only when it is fully mature. It is then naturally air dried at a low temperature to prevent nutrient loss.

REFERENCE:

<http://www.soilandhealth.org/01aglibrary/010139fieldcroproots/010139ch13.html>

APPETITE REDUCER

Another fiber source available from GNLD is the Appetite Reducer



which is part of the Glycemic Response Control Program. This fiber is designed to keep blood sugar levels stable and forms a gel sack in the stomach creating a sensation of fullness.

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