

An optimally functioning digestive system is essential to good health; the nutrients in food cannot promote health if they are being inefficiently absorbed. Anti-biotic use, travel and poor diets low in fibre can result in a disruption of the balance of natural gut flora, resulting in problems such as constipation, diarrhoea and bloating. Deficiency of the enzyme required to digest the sugar found in milk, lactase, is relatively common and is a frequent underlying cause of digestive problems.

The Digestive System

Even before you eat, when you smell food, see it, or think about it, digestion begins. Saliva begins to form in your mouth. The food then passes through the oesophagus to the stomach. In the stomach hydrochloric acid is secreted, this lowers the pH of the stomach so pepsin is activated, which breaks up proteins. Chyme, the mix of acid and food in the stomach, leaves the stomach and enters the small intestine. Several factors affect emptying of the stomach; carbohydrates spend the least amount of time in the stomach, while protein stays in the stomach longer, and fats the longest. In the small intestine the juices of two other digestive organs mix with the food. The liver produces bile, which is stored in the gallbladder and released as needed to emulsify fat. The pancreas produces a juice that contains a wide array of enzymes (substances which speed up chemical reactions) to break down the carbohydrate, fat, and protein in food, called amylases, lipases and proteases respectively. Finally nutrients are absorbed through the intestinal walls and transported throughout the body. The waste products of this process include undigested parts of the food, known as fibre. These materials are pushed into the colon, where they remain until they are expelled as faeces.



Gut Problems

Irritable Bowel Syndrome

IBS is a common condition characterised by recurrent abdominal pain and discomfort, bloating and alterations in bowel function, diarrhoea/constipation, or a combination of both, typically over months or years. The condition is linked to imbalances in gut bacteria, stress, low fibre diets, high caffeine intake and food intolerance.

Heartburn

Heartburn occurs when the ring of muscle designed to keep the lower oesophagus closed fails to do so effectively and acid from the stomach backs up into the oesophagus, causing heartburn.

Lactose intolerance

Lactose intolerance is the inability to produce sufficient quantities of the enzyme lactase, which digests the sugar in milk called lactose. This is par-

ticularly common amongst those of Asian and African descent. Typical symptoms include flatulence and diarrhoea.

Ulcers

Epithelial (lining) cells secrete mucus that forms a protective barrier between the cells and stomach acids; peptic ulcers result when this protective mechanism fails. Overproduction of acid, decreased mucus, the use of NSAID pain killers and infection with *Helicobacter pylori* are linked to the development of ulcers.

Celiac disease

Celiac disease describes a severe immune response to gluten, a protein found in wheat, barley and rye; symptoms include diarrhea, weight loss (or stunted growth in children) and fatigue. Problems related to the malabsorption of nutrients are characteristic. Presently the only effective treatment is lifelong adherence to a gluten free diet.

Information created by Quest Vitamin's Nutritionist.

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Gut Problems Continued . . .

Crohn's Disease

Crohn's disease, also known as inflammatory bowel disease, occurs when the immune system attacks the GI tract; abdominal cramping, diarrhoea and frequent bowel movements are common symptoms. Although genetic factors are implicated in the development of the disease smoking and diets high in sweet, artificially fatty or refined foods may also play a role. Crohn's Disease is similar to Ulcerative Colitis, a condition characterized by inflammation of the large intestine; bloody diarrhea is the major symptom.

How to Make Sure Your Digestive System is Healthy

Life-style tips: Eat a diet based on whole-grains, fresh fruit and vegetables and high quality protein; consume caffeine and alcohol in moderation. Many people experiencing digestive problems may wish to follow an elimination diet, this involves removing foods you eat regularly for a period of 7-10 days. If symptoms significantly improve food intolerance may be causing your problem, if this is the case then only after about two months should foods gradually be re-introduced. Do not permanently cut out food groups without professional advice.

Key Nutrients For Digestion:

- ✓ Digestive Enzymes
- ✓ Glutamine
- ✓ Vitamin A
- ✓ Senna
- ✓ Aged Garlic

Supportive Nutrients

Probiotics are beneficial bacteria that naturally reside in the gut; when taken in supplement form they have a number of benefits for the digestive system. Please refer to the Probiotics Fact Sheet for further information.

Digestive Enzymes are protein molecules, they are considered catalysts, which means they make chemical reactions in the body happen faster. Enzymes are needed for digestion, they are present in raw foods; however since most of the foods we eat are cooked or processed in some way and since raw foods we do eat contain only enough enzymes to process that particular food, our bodies must produce the majority of the digestive enzymes we require. Taking a digestive enzyme supplement is useful for those experiencing symptoms of inefficient digestion such as flatulence and bloating. Those with specific enzyme deficiencies such as lactose intolerance or pancreatic insufficiency may also benefit. Acidic pH stimulates digestive enzyme secretion, therefore the addition of hydrochloric acid to digestive enzyme combinations will enhance their efficacy.

Glutamine - This amino acid serves as a source of fuel for intestinal mucosal cells.

Vitamin A is required to maintain the integrity of mucosal cells.

Further Support

Senna - This herb contains compounds that have laxative effects.

Aged garlic extract acts as a prebiotic, enhancing the growth of "friendly bacteria". It also has anti-fungal properties.

If you are not digesting food effectively you will not gain adequate nutritional benefit from your meals; supporting the digestive system with the appropriate supplements and a healthy life-style will help you achieve and maintain optimal health.