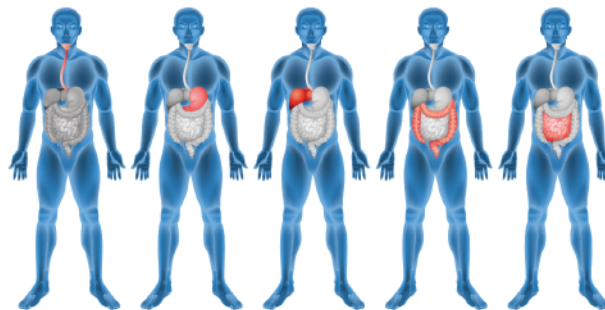




BENEFITS OF MICRONUTRIENT SYNERGY IN DIGESTIVE HEALTH



The human digestive system is approximately 16 feet long and it is estimated that the digestive system will process more than 25 tons of food over the course of our lifetime! The function of our digestive system is to convert the foods that we eat into bioenergy for the cells to use for maintenance, growth, and repair. Although we tend to think of the digestive system in terms of organs such as the stomach, intestines, liver and pancreas, these digestive organs are made up of different types of specialized cells.

Digestion begins before we even put food into our mouth. Any smell, taste, or sound associated with food prepares the digestive system for the food that will arrive. The cells lining the **mouth** secrete saliva containing the enzyme amylase, which helps in the digestion of carbohydrates. Chewing stimulates the cells of the salivary glands to release specific hormones that in turn stimulate the thymus gland to produce T-lymphocytes (white blood cells) which are essential for the immune function. The food then moves through the **esophagus** to the stomach and the small and large intestines. The esophageal muscles contract and relax pushing food in a progressive wave motion (peristaltic movement) towards the stomach where the enzymatic digestion begins. The **stomach** works as the body's blender and it chops, dices, and liquefies food into a soupy liquid called chyme, which is the beginning of the process of protein digestion. Stomach cells also secrete hydrochloric acid (HCl) required for protein digestion and HCl kills microbes that come in with food, effectively sterilizing it. The cells lining the stomach provide intrinsic factor needed for vitamin B12 absorption. Digestion that occurs in the stomach and small intestine requires cooperation from the liver and pancreas. The **liver** is an essential organ required for digestion. In addition to many other functions, the liver cells make bile, which helps in breaking down fats. Specialized cells in the **pancreas** produce the digestive enzymes - amylase, lipase, and protease. These

enzymes digest half of the protein and carbohydrates and 90% of the fats that we ingest. Moreover, the pancreas is critical for the production of insulin and regulation of blood sugar levels. Subsequently, the food moves to the **small intestine** where the final stages of enzymatic digestion occur and where almost all nutrients are broken down and absorbed into the blood. **The large intestine (colon)** helps to absorb 90-95% of the water and maintain the body's fluid balance and the formation and excretion of the waste products.

Digestion is a complicated task and the cells building the digestive tract are constantly renewing. Optimum function of the cells of not only the digestive system but also those of the immune system, the hormonal system, the circulatory system, and the nervous system is required to assure that food is properly broken down and absorbed. A constant supply of essential micronutrients is critical for the functioning of all of these cells. Poor dietary habits, diseases, pharmaceutical drugs, and stress affect the functioning of the digestive system as they further contribute to a deficiency of micronutrients. Micronutrients such as vitamins C, B6, B12, and folic acid are necessary for normal functioning and maintenance of these systems. Moreover, betaine hydrochloride, and the enzymes bromelain, papain, ginger root, and peppermint are also important to support the digestive process. Daily supplementation with such synergistically acting micronutrients helps optimize the functions of the cells of the digestive system that distribute nourishment to the entire body. In order to benefit from a healthy lifestyle, it is important to care for the cells that help digest and distribute these micronutrients to each of the 60 trillion cells in our body.

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The ground-breaking nature of this research poses a threat to the multi-billion dollar pharmaceutical "business with disease". It is no surprise that over the years the drug lobby has attacked Dr. Rath and his research team in an attempt to silence this message. To no avail. During this battle, Dr. Rath has become an internationally renowned advocate for natural health. Says he: "Never in the history of medicine have researchers been so ferociously attacked for their discoveries. It reminds us that health is not given to us voluntarily, but we need to fight for it."

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