

# ESSENTIAL ENZYMES™

*Maximizes Mealtime Nutrition*

Sometimes healthy eating habits are not enough to ensure that we absorb the full nutritional value from our food. ESSENTIAL ENZYMES supports your systems for digestion of multiple food groups: carbohydrates, protein, fat and fiber.



	Carbohydrate Digestive System	Protein Digestive System	Fat Digestive System	Fiber Digestive System
ACTION	<p>The first step in digestion occurs in the mouth, where the digestion of carbohydrates is initiated. Amylase, the enzyme contained in saliva, <b>converts starch (a form of carbohydrate) into simpler sugars</b>. This process is completed when the pancreas secretes more amylase into the small intestine. Lactase supports the breakdown of lactose, sugar from milk that many populations are unable to digest.</p>	<p>In the stomach, food is broken down further by churning and the action of the gastric juice, which contains pepsin and hydrochloric acid. Pepsin, a protease enzyme that depends on the highly acidic (pH 1.5 to 2.5) environment of the stomach for functioning, begins the process of <b>breaking down protein into peptides and amino acids</b>. The food, at this stage called “chyme,” then continues on to the alkaline (pH 7.0 to 8.0) environment of the small intestine, where the intestinal and pancreatic proteases complete protein digestion.</p>	<p>Fat digestion occurs in the initial section of the small intestine. The liver produces bile salts and acids, and stores them in the gall bladder. Bile emulsifies fats, breaking them apart into droplets. In this form they can be attacked by the pancreatic enzyme called lipase that <b>helps to break down fat into glycerides and fatty acids</b>. Bile and pancreatic fluid together neutralize the stomach acid, essential because the intestinal enzymes function only at a pH of 7 to 8.</p>	<p>Fiber—found in foods such as whole grains, fruits and vegetables—provides bulk to enable the large intestine to work effectively. It also helps regulate the absorption of nutrients in the small intestine. The breakdown of certain fibers may add further benefit. Cellulase and hemicellulase <b>break down plant cell walls in fibrous foods</b>, thereby making available nutrients within these cells.</p>
CONTENT	Amylase, Amyloglucosidase, Lactase	Vegetal Analog of Pancreatin (Protease), Acid Stable Protease	Lipase	Cellulase, Hemicellulase

