

Enzymes - 101

The reactions which enzymes stimulate are essential to the life process. It is estimated that a single human liver cell contains at least 1,000 different enzyme systems. Hundreds of thousands of enzyme reactions take place in your body each minute. The best way to insure adequate enzyme activity is to provide our bodies with the building blocks needed to make those enzymes. These building blocks are components of the foods we eat: amino acids (from proteins), carbohydrates, vitamins and minerals. However, dietary enzyme supplementation can also prove beneficial through the use of **digestive enzymes**.

There are three major enzymatic classifications: metabolic, digestive and those obtained from food. Metabolic and digestive enzymes are produced in the body, but food enzymes are not—they only come from food. Processing or cooking food above 112 degrees destroys food enzymes.

“Metabolic enzymes” build the body from proteins, carbohydrates and fats, and break them apart when they are old. All our cells, tissues and organs function because of these enzymes. They are responsible for chemical reactions within cells, such as energy production and detoxification. Each body tissue/system produces its own specific set of metabolic enzymes. Metabolic enzymes cannot be supplied through supplementation.

“Digestive enzymes” are secreted along the gastrointestinal tract and help break down foods, enabling nutrients to be absorbed into the bloodstream. Our bodies manufacture and secrete about 24 different digestive enzymes depending on the type of food we eat. Digestive enzymes break down food particles for storage in the liver or in muscles. This stored energy is later converted by other enzymes for use by the body when needed.

Causes of Enzyme Depletion

- Pesticides and chemicals
- Hybridization and genetic engineering of foods
- Bovine growth hormone (BGH) used in livestock growing
- Pasteurization
- Irradiated food
- Excess intake of unsaturated and hydrogenated fats
- Cooking food at high temperatures, thus destroying the enzymes
- Microwaving
- Radiation and electromagnetic fields
- Fluoridated water
- Heavy metals
- Mercury amalgam dental fillings
- Root canals

“Food enzymes” come from plants, and are vulnerable to processing and temperatures above 112 degrees. These vital helpers predigest our food and aid greatly in the absorption of nutrients. Without them (either from food or supplementation), the natural process of full digestion is lost, which puts an undue strain on the digestive system.

The three major food enzymes are: amylase, which breaks down starches into sugars; lipase, which breaks down fats into fatty acids, and protease, which breaks down proteins into amino acids. Protease is also used therapeutically for digesting viruses and bacteria, and for eliminating allergies.

Enzymes can be found in many different plant foods, but the plant must be fresh and whole in order to contain live enzymes (unless it’s been specifically processed to retain the enzymes). Some foods that contain lots of enzymes include avocados, papayas, pineapples, bananas and mangos. Sprouts are one of the richest sources of enzymes. Many companies process these foods into enzyme supplements. Many pickled (or fermented) foods, as well as miso paste, also contain enzymes. Unless at least 50% of your diet consists of organic, whole, raw plant foods that contain naturally occurring food enzymes, you may want to take a daily enzyme supplement for better absorption of the food you eat.

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