

Optizyme

VA-025 / VA-026

Supports healthy digestive function and relieves gastrointestinal discomfort caused by hard-to-digest foods

Key Points:

- A full spectrum of plant-derived enzymes to break down proteins, fats, starches, fiber, lactose, and other complex sugars.
- Contains different proteases that can work in different pH zones of the entire gastrointestinal tract; effectively relieves the prolonged food allergy symptoms such as eczema and chronic sinusitis.
- High dose digestive enzymes to yield much faster relief to severe symptoms of indigestion and malnutrition.

Indication:

For people with symptoms of indigestion, such as bloating, gas and diarrhea, including those who do not notice much difference with the enzymes they are currently taking.

For people who are convalescing, such as those recovering from illness, severe injuries, burns, chemotherapy or operations/surgeries.

For people with symptoms of chronic food allergy including eczema and sinusitis, or food intolerance, such as lactose intolerance.

For people who are underweight, not absorbing adequate nutrients, who are tired and lack energy, or who are constantly stressed.

Description:

Enzymes contained in raw food are mostly destroyed by processing and cooking, and cannot be utilized by the body to help with digestion. Enzyme deficiency has been shown to cause gastrointestinal discomfort and pain due to inability to digest food properly,¹ and can cause malnutrition and chronic fatigue.

Optizyme is an optimal digestive aid containing a high dose, full spectrum, of plant-derived enzymes to break down carbohydrates, proteins in different pH zones of the digestive tract, and fats. This helps improve the body's absorption of nutrients, increases energy, and facilitates digestion, especially for those suffering from more severe symptoms of indigestion and malnutrition.

Carbohydrate Digestion

Carbohydrates are a major source of energy for the body. The carbohydrate digesting enzymes work together to help break down complex carbohydrates so that they can be absorbed and used by the body, which is especially beneficial for people who are not acquiring enough nutrients from foods, who do not have much appetite, or who are constantly stressed and/or fatigued.

VA-025 Quantity: 120 | Dosage Form: Vegetarian Capsules

VA-026 Quantity: 60 | Dosage Form: Vegetarian Capsules

Ingredients (per capsule):

For Carbohydrate Digestion:

Amylase (from *Aspergillus oryzae*).....17500 DU
 Glucoamylase (from *Aspergillus niger*)...9.5 AGU
 Alpha-Galactosidase.....180 GalU
 (from *Aspergillus niger*)
 Cellulase (from *Aspergillus niger*).....160 CU
 Beta-glucanase.....70 BGU
 (from *Trichoderma longibrachialum*)
 Maltase (from barley malt).....60 DP
 Hemicellulase (from *Aspergillus niger*)....30 HCU
 Lactase (from *Aspergillus oryzae*).....650 ALU
 Invertase.....213 SU
 (from *Saccharomyces cerevisiae*)
 Pectinase (from *Aspergillus niger*).....8 endo-P
 Phytase (from *Aspergillus niger*).....13.5 FTU

For Fat Digestion:

Lipase (from *Aspergillus niger*).....11500 LU

For Protein Digestion:

Protease I (pH 2.5-6.5).....23 SAPU
 (from *Aspergillus oryzae*)
 Protease II (pH 7-10).....22500 HUT
 (from *Aspergillus oryzae*)
 Bromelain.....120 GDU
 (from pineapple (*Ananas comosus*) stem)
 Papain.....100,000 PU
 (from papaya (*Carica papaya*) fruit/latex)

Non-Medicinal Ingredients:

Microcrystalline cellulose, maltodextrin, pullulan/ hypromellose (capsule)

Suggested Use:

Adults – Take 1 capsule with or after meals, or as directed by a health care practitioner.

Vegetarian formulation.

The carbohydrate digesting enzymes, especially alpha-galactosidase, help to digest starchy foods, beans, lentils, and yams to relieve indigestion symptoms such as gas, bloating, and cramp.

Protein Digestion

Proteases are very important in digestion as they breakdown protein to liberate the amino acids needed by the body for building cells, repairing tissue and forming antibodies. Increased protein absorption is important for people recovering from severe injuries, burns, operations/surgeries, or illness. Protein is also very important for athletes to build muscle mass.

Most dietary allergens are protein. As the body cannot break down certain group of proteins and/or peptides from food, prolonged symptoms of food allergy, such as eczema and chronic sinusitis, may occur. Supplementing proteases can help to reduce the hypersensitive reactions to those foods.

Proteases also play a role as anti-inflammatory agents by digesting debris caused by infections in bruised tissues or wounds. Proteases can digest unwanted debris in the blood, including oxidized or damaged proteins and certain bacteria and viruses;

therefore, protease deficient people are often immune compromised. Likewise, proteases can help to rid the heavy metal deposit, such as lead (Pb) and mercury (Hg), in the body by digesting the heavy metal-bound proteins since they exert their poisoning effect by binding to ionizable or sulfhydryl groups of proteins or enzymes.



Fat Digestion

Lipase is necessary for the absorption and digestion of fats and fat-soluble vitamins keeping nutrients at appropriate, healthy levels throughout the body. Lipase deficiency may be caused by depleted liver function, gallbladder disease or removal. Symptoms include bloating, gas, diarrhea, and over-satiety following a high-fat meal.

A study reported that lipolysis catalyzed by gastric lipase only degrades 10 – 30% of triglycerides in the stomach. This is insufficient and problematic for people who consume relatively high amount of fats daily. Lipase supplementation helps to aid fat digestion and thus facilitate further absorption of fat-soluble nutrients.²

Amylase

Amylases catalyze the hydrolysis of alpha-1, 4-glycosidic linkages of polysaccharides to yield dextrans, oligosaccharides, maltose and D-glucose; as a result, complex carbohydrates are converted into simple carbohydrates to ease absorption and utilization in the body.

A human clinical study indicates that supplementing foods with α -amylase increases energy intake by 23.8% in children, revealing the effectiveness of α -amylase in hydrolyzing complex carbohydrates. Furthermore, it helps to alleviate malnutrition in undernourished children/infants and nutritionally compromised elderly.

Lactase

Lactose intolerance causes gastrointestinal discomforts, such as diarrhea, bloating and gas production, in a great number of people. While babies obtain their dietary requirements from milk, most people lose their ability to digest lactose as they grow into adults. More than half of the world's adult population is lactase deficient, causing malabsorption of certain nutrients, such as calcium and vitamin D which are mostly available in milk.

Supplementary lactase can help the body to digest lactose properly, reducing the symptoms of lactose intolerance, so that more dairy products can be consumed, leading to better bone health. This is especially beneficial for pregnant women and the elderly.

Cellulase & Hemicellulase

Cellulase hydrolyzes cellulose through the β -D-1, 4-glycosidic bonds of cellulose. Cellulase is a complex of three distinct enzymes α -glucosidase, cellobiohydrolase and α -glucanase; this complex converts cellulose to beta-dextrans and ultimately to D-glucose. Hemicellulase breaks down hemicellulose, which categorizes a variety of polysaccharides more complex than sugars and less complex than cellulose, found in plant cell walls.

Both cellulase and hemicellulase serve as digestive aids in especially vegetarian diets, to manage the occurrence of flatulence or gastric distress caused by the fermented primary plant cell wall. Cellulase enzyme can also help with the malabsorption of nutrients, vitamins, or minerals from the diet.

Pectinase

Pectinase is the enzyme that breaks down the polysaccharide pectin by assisting the hydrolysis of pectins into simpler carbohydrates. According to studies,⁵ dry orange pulp can contain as much as 12.4-28% pectins. The inability of human body to digest pectins can cause gastrointestinal distress and nutrient losses.

Phytase

Phytase is an enzyme that breaks down the undigestible phytic acid (phytate) portion in grains and oil seeds and release the digestible phosphorus and calcium. Phytate (myo-inositol hexaphosphate) is a major component of cereals (rice, wheat, maize), comprising of up to 1% of total cereal content. The presence of phytate in the diet can decrease the iron (Fe) absorption from a meal. Degradation of phytate is, hence, of nutritional importance due to the fact that the mineral binding strength of phytate decreases when phosphate groups are removed from the inositol ring resulting in an increased bioavailability of essential dietary minerals.

A study⁶ has shown that the addition of *Aspergillus niger* phytase to the phytate-containing meal just before consumption was found to markedly increase the iron absorption from 14% to 26%. Additionally, *A. niger* phytase were discovered to have two pH optima at 37°C; one at pH 2.0 and one at pH 6.0. Activity occurred at all pH values between pH 1.0 and 7.5; thus, high phytase activity would occur in the stomach and also small intestine of humans.

Protease I and II

Proteases I and II are active in different pH regions of the gastrointestinal tract, which means that these proteases can work in both the acidic environment of the stomach and the alkaline environment of the intestine to ensure complete protein digestion and increased amino acid availability.

Bromelain

Bromelain is a protease derived from pineapple stem. Bromelain is active at a wide pH range of 4 to 8, which means it can act in both the stomach and the intestine. Additionally, bromelain is an anti-inflammatory agent and is helpful in healing minor injuries, swelling, and burns. It can also relieve symptoms such as stomach upset and heartburn.⁸

Papain

Papain is a protease present in papaya and is capable of hydrolyzing consumed proteins as well as helping with bloating and chronic indigestion. It also helps to reduce wound pain and inflammation, and allow granulation tissue to develop.

Caution:

Consult a health care practitioner prior to use if you are pregnant or breastfeeding. Discontinue use if allergic reaction occurs.

References:

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3. Debongnie JC, Newcomer AD, McGill DB, and Phillips SF. Absorption of nutrients in lactase deficiency. *Digestive Diseases and Sciences*. 1979; 24 (3): 225-231.
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5. Jayani RS, Saxena S, Gupta R. Microbial pectinolytic enzymes: A review. *Process Biochemistry*. 2005; 40: 2931 – 2944.
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8. Orsini RA. Bromelain: safety & efficacy report. *Plast Reconstr Surg*. 2006; 118: 1640-1644.

The information in this guide is for use by health care practitioners as a reference only.