



PDA

Stock #1837-5 (200 capsules)

PDA is a digestive enzyme supplement designed especially to aid the digestion of dietary protein and enhance assimilation of important nutrients, including calcium and iron. PDA supplies both betaine HCl (hydrochloric acid) and pepsin in each capsule, as these substances are essential for optimal digestion of protein, whether animal or plant-derived.

Proper digestion is an often overlooked requirement for optimum health, particularly when incomplete or disordered digestion can be a major contributor to the development of numerous disease conditions. In fact, approximately 58% of the population is believed to suffer from some type of digestive disorder. Not only can digestive dysfunction lead to nutritional deficiency and the upset of healthy bowel flora, but in addition, incompletely digested macromolecules can be absorbed into the systemic circulation problem can lead to a variety of immune complex diseases and is currently theorized to play an integral role in the etiology (origin) of food allergies. For example, antigenic macromolecules can trigger the body's defenses against exposure to what is perceived as foreign protein or polypeptide

invaders, thus producing the symptoms of allergy.^{1,2}

Gastric acid secretion is a fundamental part of digestion and assimilation, especially of proteins and minerals. In addition, HCl stimulates the release of pancreatic secretions, which contain the majority of enzymes that actively break down foods. Unfortunately, numerous studies have shown that the ability to secrete stomach acids decreases with age—low stomach acidity has been found in over 50% of individuals above age 60. And although much attention has been paid to hyperacidity conditions, it is more likely that significant health problems result from hypochlorhydria (insufficient hydrochloric acid in the gastric juice) and achlorhydria (absence of hydrochloric acid in the gastric juice). In fact, some children with asthma have been found to have low levels of hydrochloric acid, and individuals with pernicious anemia and subsequent vitamin B12 deficiency are often found to have achlorhydria.^{1,3-5}

Symptoms of low gastric acidity include belching, bloating, burning in the abdomen, constipation or diarrhea, flatulence immediately following meals, indigestion, nausea, a feeling of 'fullness' after eating, multiple food allergies, and itching around the rectum. Additional signs of insufficient stomach acid include post-adolescent acne, dilated capillaries in the cheeks and nose (in non-alcoholics), chronic intestinal candida or parasite overgrowth, iron deficiency, undigested food in the stool, upper digestive tract "gassiness", and weak, cracked or peeling fingernails.^{1,3,4}

Furthermore, both hypochlorhydria and achlorhydria have been found to be associated with a number of specific diseases, including Addison's disease, asthma, chronic auto-immune disorders, celiac disease, dermatitis herpetiformis, diabetes mellitus, eczema, gallbladder disease (including gallstones), Graves' disease, hepatitis, chronic hives, hyper- and hypothyroidism, lupus erythematosus, myasthenia gravis, pernicious anemia, psoriasis, rheumatoid arthritis, rosacea, Sjögren's syndrome, thyrotoxicosis and vitiligo.^{1,3,5}

Each capsule of PDA provides:

Betaine (betaine HCl) - 325mg

Pepsin (800,000 pepsin units) - 20mg

Betaine HCl (Hydrochloric acid) is secreted by the stomach's parietal cells. Efficient protein digestion can only occur if there are sufficient levels of HCl to produce a low pH (acidic) environment. HCl then combines with pepsinogen, secreted by the stomach's chief cells, to create pepsin, the principal enzyme responsible for actually breaking down proteins. Many cases of heartburn and indigestion are often effectively treated with HCl supplementation. Although a seeming paradox, sufficient HCl is necessary for the stomach's exit valve (the pylorus) to open and allow food to pass through into the duodenum. Without enough HCl, the pylorus cannot open correctly, thus trapping food and any stomach acid that is present and causing discomfort. In addition to aiding digestion by denaturing protein, HCl also kills any ingested bacteria and parasites. Without sufficient HCl, the stomach's acid environment shifts to an alkaline pH, which fosters the buildup of undesirable bacteria and an overgrowth of *Candida albicans*. Furthermore, HCl makes some minerals (including calcium and iron) more absorbable. In fact, an HCl deficiency can lead to anemia and osteoporosis, in spite of iron- and calcium-rich dietary intake.^{1,3,6-9}

Pepsin is an enzyme that assists the digestion of proteins in the acidic environment (optimal pH 1.8 to 3.5) of the stomach—pepsin converts proteins into short chains of amino acids. Pepsin is also used to remedy a lack of appetite. Incidentally, pepsin is secreted by the gastric and pyloric glands initially in the form of pepsinogen, which has no digestive activity. Upon contact with hydrochloric acid, pepsinogen is immediately activated, forming pepsin.^{4,7}

It is important to note that hydrochloric acid supplements should not be used if taking aspirin, ibuprofen, NSAIDs (nonsteroidal anti-inflammatory drugs), or steroids, as combining these drugs with acid supplements can elevate the risk of developing ulcers. In addition, if black tarry-appearing stools are passed, immediately discontinue supplementation and notify a qualified healthcare professional, as this may signify upper gastrointestinal bleeding and the possibility of a silent ulcer.³

References:

- 1 Pizzorno J., Murray, M. and Barrie, S. (eds.). *A Textbook of Natural Medicine*. Seattle, WA: Bastyr University Publications, 1994.
- 2 Bitomsky, M. "Digestive Enzymes: The Missing Link." *Life Extension Magazine*; 1999, 5(4).
- 3 Golan MD, R. *Optimal Wellness*. NY, NY: Ballantine Books, 1995.
- 4 Cichoke DC, A. *The Complete Book of Enzyme Therapy*. Garden City Park, NY: Avery, 1999.
- 5 Haas MD, E. *Staying Healthy With Nutrition*. Ten Speed Press, 1992.
- 6 Cichoke DC, A. *Enzymes & Enzyme Therapy, 2nd Ed*. Los Angeles, CA: Keats, 2000.
- 7 Dittmar MD, F. & Wellmann, J. *Enzyme Therapy Basics*. NY, NY: Sterling Publishing, 2000.
- 8 Mindell PhD, E. & Hopkins, V. *Prescription Alternatives, 2nd Ed*. Los Angeles, CA: Keats, 1999.
- 9 Trenev, N. *Probiotics: Nature's Internal Healers*. Garden City Park, NY: Avery, 1998.