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Frequently Asked Questions: Foundation Products

1. What are enzymes?

Enzymes are energy rich protein molecules that are necessary for life. They catalyze and regulate chemical reactions and are an essential part of every activity in the body. Digestive enzymes break down the food we eat, releasing nutrients for energy production and cell growth and repair.

2. Where do the supplemental digestive enzymes come from? Are they safe?

Transformation uses mycelial (fungal) enzymes derived from the fermentation of non-toxigenic strains of various fungi. The organisms used have been studied extensively by the food and pharmaceutical industries to establish their safe use in the production of amino acids, enzymes, antibiotics, and other beneficial compounds.

Each specific strain is extensively screened to determine if the fungal organism is capable of producing mycotoxins under the conditions of fermentation. Once fermentation by the organism is complete, the enzymes are extracted by a complex process that isolates the protein compounds from the surrounding material. Therefore, no living *Aspergillus* cells remain in the isolated enzyme after the extraction process is complete.

3. What are the benefits of fungal enzymes over other enzymes?

The key benefits of mycelial (fungal) enzymes used as digestive aids are their gastrointestinal stability and broad pH function. What that means is Transformation's enzyme blends not only survive the harsh GI environment but they are also active throughout varying pH ranges. This allows for maximum digestive capabilities in the stomach and intestines as well as systemic benefits in the blood stream. Most other supplemental enzymes (animal or bacterial) may not be GI tract stable and require an enteric coating, thus limiting the pH range in which they function.

4. Why do I need to supplement with digestive enzymes?

Our bodies naturally produce digestive enzymes and the enzymes that run our metabolic processes. However, genetics, lifestyle, diet, processed foods, prescription drugs, and environmental factors all influence digestion on a daily basis whether we are aware of it or not. You can no longer assume eating a healthy diet will result in good nutrition for the body. Digestion *must* take place. Every person with or without digestive or health challenges will therefore benefit from a digestive enzyme formula. Transformation's digestive formulas are designed to promote optimal digestion, support nutrient

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availability, and help reduce food intolerances, thereby leading to a healthy and efficient immune system and the timely elimination of wastes.

5. When should I take the different kinds of enzymes? How strict is the timing?

We suggest a digestive formula at the beginning of the meal because that is when the digestive process begins. You will want the enzymes available as soon as possible to assist the digestive process. However, if you forget, then it is perfectly fine to take them in the middle, at the end, or whenever you remember, as digestion lasts several hours.

We suggest taking protease between meals (or on an empty stomach) because the goal here is to get the protease into the blood stream. Once in the blood stream, its fibrinolytic and proteolytic action benefits circulation, the immune system, inflammation, and detoxification. There is usually enough protease in the digestive formulas to meet the need for protein digestion during meals. On occasion, however, there is need for additional protease with meals, and we will suggest this. Additionally, we find that some patients are more sensitive to taking supplements on an empty stomach, and for these people we might suggest taking their protease at the end of a meal. However, we often find that after the patient has been on the enzymes for a period of time, this "sensitivity" is resolved.

We suggest taking probiotics at bedtime because the gut is at rest during the night. The probiotic organisms have the best opportunity to adhere to the intestinal wall for colonization during this time of least activity in the GI tract. We may also suggest additional probiotics in the morning to assist with bowel regulation, and the probiotics may also be taken with meals to reduce digestive discomfort from gas and bloating.

As you can see, the recommended timing is ideal, but not strict. For the very busy patient who just can't seem to take them as recommended, we say: "Taking them when you remember is better than not taking them at all!"

6. What should I expect to feel when I begin taking digestive enzymes?

Most people feel better in terms of energy, digestion, and elimination. Occasionally persons may experience a period of increased detoxification when beginning enzyme therapy. This is actually a good sign as the body is now able to eliminate excess toxins, although you may feel tired or achy for a few days. Increasing enzyme dosages and water intake is often the best recommendation to help you through this natural process.

7. Can enzymes be harmful if you take too many?

When speaking about digestive enzyme formulas, no. As active protein molecules, the enzymes do not accumulate in the body. They impart enzymatic activity that lasts anywhere from one to four hours and then they are eliminated from the body or the proteins are broken down and the amino acids are used for other purposes. As with any herbal or nutritional supplement, evaluation of amounts and over consumption should be determined on an individual basis.

8. Can children take digestive enzymes?

Yes, absolutely. You can give digestive enzymes to infants, toddlers, and young children. For toddlers and young children, Transformation recommends the basic protocol of Digestzyme, Purezyme, and Plantadophilus.

Many children like to chew the capsules and/or are able to swallow them. But if you prefer, the capsules can be pulled apart easily and mixed with water or juice. Transformation's clinic has successfully applied enzyme protocols with many digestive disorders including diarrhea, constipation, colic, reflux, allergies, eczema, asthma, cystic fibrosis, and autism.

9. Can enzymes be taken with other prescription medications?

Digestive enzymes function by breaking down specific chemical bonds in foods. In most cases digestive enzymes can therefore safely be taken with medications. However, it is of course always recommended to let your health care provider know what you are taking.

One area of caution is with prescription blood thinning agents. These types of prescription drugs interfere with the natural blood clotting mechanisms, while proteases break down fibrin allowing for better blood flow. They can be taken in conjunction, but it is recommended to dose them about four hours apart and monitor lab work closely.

10. Can you take protease enzymes when taking prescription "protease inhibitors"?

More often than not, the term "protease" that describes proteolytic enzymes is used in very general terms. There are many metabolic proteases in our body, each with many different functions. The medications that are designed as protease inhibitors are targeting a very specific viral protease. The supplemental digestive proteases are very different and will not interfere with the medication. In fact, oral supplemental digestive enzymes such as TPP Protease, TPP Protease 375K, PureZyme, and TPP Protease IFC can be very supportive to those patients with auto-immune disorders.

11. Will taking supplemental digestive enzymes inhibit the body's ability to make its own enzymes?

No. It is the presence of hormones, not enzymes, that signals for secretion of more or less enzymes. Whether from endogenous or exogenous enzymes, complete hydrolysis of food macromolecules is the indicator for the hormones secretin and cholecystekinin to signal the pancreas to stop secreting pancreatic juices. Taking supplemental digestive enzymes supports and assists the digestive function; it does not inhibit it.

12. Are your products "100% natural" and organic?

The preference of natural, synthetic, or organic ingredients and the definition of each can be very confusing and controversial. We believe the real question should be: "Are your ingredients safe, effective, and free from harmful chemicals?" Transformation's goal, in conjunction with its manufacturers, is therefore to provide safe, effective, high quality nutritional supplements that are free of any pesticide or herbicide residuals.

Transformation imposes very strict quality control standards on ingredient selection and our manufacturer has been certified as a GMP company. To each raw material received, a unique set of methodologies and specifications is developed in accordance with all available compendial literature. This set of methods and specifications is then applied to each subsequent batch received. All reasonable efforts are made to completely and effectively characterize each raw material intended for production.

13. Are your digestive enzymes gluten free? Dairy free? Vegetarian?

Yes to all three. The digestive enzyme formulas are vegetarian, dairy free, and gluten free and they come in vegetarian (cellulose) capsules. In fact, the digestive formulas are very effective in breaking down gluten, lactose and casein the food molecules that often cause problems for those with gluten or dairy intolerance.

Transformation does formulate support products that contain ingredients derived from animal but they are not included in the Foundation products (Digest, Protease, Probiotic).

14. Are your products FDA approved?

Transformation uses only the highest quality pharmaceutical grade digestive enzymes. Our products are considered as Dietary Supplements and therefore do not fall under FDA guidelines. As a leader in the health care supplement industry, Transformation and its manufacturer are committed to enforcing the highest quality control standards.

15. What are probiotics?

"Probiotics" refers to a group of microorganisms that colonize the GI tract, where they live in symbiosis with their host. Within that symbiotic relationship, they provide several benefits to the host, including the synthesis of several important molecules and nutrients as well as the control of potentially pathogenic organisms.

The human gastrointestinal tract hosts over 400 species of mircroorganisms. Some of these are friendly to the human host as mentioned above, whereas others are potentially harmful, should they be allowed to grow uncontrollably. The organisms most frequently observed (according to Mitsuoka) include *Enterococci*, *Lactobacilli*, *Clostridia*, and *Staphylococci*.

16. Why do I need Probiotics?

Oral supplementation with probiotics can impart many health benefits such as improved digestion, immunity, and elimination.

Digestion – Probiotics produce enzymes such as protease, lipase, and lactase to further assist with protein and fat digestion as well as reduce problems associated with lactose intolerance. Probiotics also produce B vitamins, particularly folic acid and B12, which are biocatalysts in food digestion.

Immunity – Intestinal microbes are a key factor in the development of the post-natal immune system and in acquired immune response and inflammation. Probiotics produce the natural antibiotic-like substance acidophilin and inhibit the growth of opportunistic microorganisms.

Elimination – Probiotics act as natural stool softeners and facilitate the healthy and timely elimination of waste.

17. Are your probiotics lactose free?

Lactobacillus denotes "lactic acid producing" or "acid loving." The term "Lacto" does not indicate a relation to lactose or dairy, as is commonly misunderstood. Lactose may be used in the medium to grow the probiotic

culture; however, this is completely removed from the final product. Transformation's probiotic formulas are lactose-free, and they prefer a pH of 6.5 to 6.8.

18. Are your probiotics GI tract stable?

Lactobacilli probiotics are GI tract stable by nature. That is a given according to an understanding of digestion and the nature of probiotics. Some of the bacteria will be lost in transit, but the vast majority survive the GI tract. This is especially true when taken during times when the digestive system is dormant, such as first thing in the morning and at bedtime. When digestion is not in progress, the stomach pH is closer to neutral. Only in the peak of digestion does it hit 2.0 - 3.0, and even then some probiotics survive.

Transformation's probiotic products are live bacteria and are consequentially assigned a one year shelf life. The probiotics are manufactured under refrigeration and inventoried under refrigeration prior to shipment. The products are not shipped on ice as it has been determined unnecessary for short periods of time. However, to help preserve maximum activity for the longest amount of time, Transformation strongly recommends that the customer refrigerate our probiotics to maintain activity once they have been received. You may occasionally come across some probiotics that use an enteric coating. We believe this is used to increase shelf life, and it may improve gastric survival but is not absolutely necessary. Transformation prefers refrigeration over enteric coating to avoid the use of additives that provide no nutritional value.

When traveling, it is recommended to only take with you only the amount needed, perhaps in a separate container or pillbox. For short periods of time, non-refrigeration is acceptable. The probiotics may lose a slight amount of activity but do not go "bad" if left in warmer environments.

19. When looking for an enzyme product, what label information is important?

The enzyme activity rather than its weight is the information that tells you the real value of the enzyme product. The enzymes should also be acid stable and function in a broad pH range. Lastly, take a close look at the "other ingredients" list for excipients, fillers, or additives that may not provide nutritional or digestive benefits.

Transformation uses pharmaceutical grade enzymes that are GI stable and function in a broad pH range. These products are formulated to provide optimal enzyme activity for healthy digestion. The ingredients have been rigorously tested to ensure safety and efficacy. Transformation does not use any fillers, additives, or other excipients in our products.