

# **Allegany Nutrition**

## **Digestive Enzymes: What You Need To Know**

### **Why Digestive Enzymes are Important:**

As we age our bodies ability to produce enzymes slowly diminishes putting us at risk for degenerative diseases. Other factors such as cooked and processed foods increase the need for digestive enzymes. Without digestive enzymes the body cannot utilize proteins, fats, carbohydrates, fibers, and sugars, we eat. Digestive enzymes also help break down the supplements we take so that the vitamins, minerals and other nutrients we supplement with can be used effectively and not wasted. Digestive enzymes also help ensure **complete** digestion of our food and supplements. **Partial** digestion of our meals can cause harmful imbalances in our body.

**\*Digestive Health**

**\*Food Allergies**

**\*Lactose Intolerance**

**\*Heartburn**

**\*Constipation**

**\*Chronic Illness**

**\*Weight Loss**

**\*Longevity**

**\*Diarrhea**

**\*Overall Health**

### **A Few Key Functions of Digestive Enzymes:**

1. Undigested food begins to ferment and rot in the intestines and colon, this decaying process leads to the buildup of harmful toxins which enter the rest of our body. These toxins can cause fatigue, pre-mature aging, and numerous degenerative diseases. Most of us have experienced this fatigue after a large meal. Nutrient absorption is hindered by undigested food that has stuck to our intestinal walls. Digestive enzymes help break down this undigested food.
2. Many health professionals believe that a low level of lipase in fatty tissue may contribute to obesity. If the lipase in the digestive enzyme supplement is not used up in the role of digestion during the meal it may be stored in the liver for future use such as digesting stored fat. This is crucial because of the correlation between obesity and Type II diabetes, hypertension, breast cancer and other prevalent American diseases.
3. Digestive enzymes can play a role in the immune system and metabolic stress on the digestive system. Fatty deposits that build up around the inside of blood vessels, can cause the restriction of blood flow and increase blood pressure.
4. When food is not completely broken down the undigested proteins, fats, and minerals can form uric acid crystals that may lead to kidney stones and joint pain.

### **Why we need Digestive Enzymes:**

1. The body produces two types of enzymes, metabolic and digestive. When you eat cooked or processed foods, nearly all food enzymes are destroyed which forces the body to supply all of the needed digestive enzymes, which can overstress the pancreas and its ability to also produce metabolic enzymes (enzymes needed for all bodily functions). Any food that is cooked over 118 degrees contains relatively no functioning digestive enzymes.
2. Approximately one third of the body's energy is spent digesting food. People with poor digestion can expend even more energy trying to digest food properly. The less energy the body spends on digesting food the less hungry you will feel, and the more energy you will have.

## Myths about Digestive Enzymes

Some people think if they take digestive enzymes for a long period of time, that they will slowly shut down the body's ability to produce digestive enzymes. Another myth people often think is that digestive enzyme supplements stop working after a period of about 30 to 45 days. Both of these are incorrect. Here is an easy way to understand why. If you take a vegetarian person who eats all raw foods such as fruits and vegetables, their pancreas doesn't need to work as hard in order to produce a lot of digestive enzymes, because they're consuming raw foods that contain digestive enzymes. On the other hand, if a person eats nothing but cooked and processed foods their pancreas is producing a large amount of digestive enzymes in order to digest their meals. In some cases, a person's pancreas is working so hard to produce digestive enzymes that it will **enlarge**.

There was a study done with a baby human and a baby calf (cow). Pound for pound of body weight the pancreas in the baby and the calf were the same size. When the human baby reaches middle age and the calf reaches middle age the person's pancreas is up to **3 times** the size of the cow, pound for pound of body weight. This can be from all the cooked and processed foods that the person has been eating over the years. Everyone knows that an enlarged heart for the wrong reasons is not healthy, and neither is an enlarged pancreas.

When either the vegetarian or the person who eats cooked and processed foods, starts to take digestive enzymes, their body will initially continue producing the same amount of enzymes as it did prior to supplementing with the enzymes. This is the period of time where people feel great results from taking the enzymes because their body is flooded with more digestive and metabolic enzymes. After a period of time (30-45 days) some people feel as if the enzymes aren't working as well. This is not the case. What has happened is that their pancreas does not need to work as hard to digest the meal because the meals are being supplemented with the digestive enzymes needed to digest it.

When taking digestive enzymes the human body thinks that it's eating natural unprocessed foods containing the digestive enzymes that should naturally be contained in the food. Therefore the pancreas can focus more on other things such as regulating blood sugar levels and producing metabolic enzymes needed for everyday maintenance and repair. After a period of time the pancreas starts to produce fewer digestive enzymes just like a person that is a vegetarian. This relieves metabolic stress off of the entire body. Yet if someone using digestive enzymes stops taking them, their pancreas will resume producing as many digestive enzymes as it did before. Often their previous health imbalances will return. The imbalances often return because the pancreas starts over working again to produce the enzymes needed. The pancreas only produces as many digestive enzymes as needed.

Many people will take multi-vitamins for years whether they can feel a difference in energy or not. They do this because they believe in the long term benefits heard about on TV. Many health practitioners believe and teach to their clients that taking multi-vitamins **without** digestive enzymes produces little benefits. Digestive enzymes should be taken even more consistently than multi-vitamins because enhanced digestion releases more of the vital nutrients from our food. They should be taken to help eliminate current imbalances, but also taken just like multi-vitamins, anti-oxidants, and other herbs for long term benefits. When the average person is educated about this, it makes sense and they will continue supplementing with digestive enzymes.

Some people often say that they can't afford nutritional supplements such as digestive enzymes. If someone takes one digestive enzyme with each meal per day, it will cost them less than 75 cents per day. This is far less than medications that may only fix the symptoms of a problem not to mention possible side effects. The benefits of taking digestive enzymes far outweigh the cost. Ask yourself, if I can't afford 75 cents per day for a nutritional supplement, how am I going to afford taking time off work, dealing with long waiting room times with other contagious people, and possible surgeries from prolonged health imbalances? **All caused by undigested food.**

## **Why Allegany Nutrition Enzymes are Top of the Line!**

Once you know why digestive enzymes are important, it's equally important to know how to find a high quality product. Allegany Nutrition utilizes only **plant-derived** enzymes from *Aspergillus Orzae*, *Aspergillus Niger*, *Rhizopus-Oryzae*, and *Saccharomyces*. This enables the enzymes to work efficiently in a wider pH range than other forms of digestive enzymes such as animal derived. This is important because the pH in the lower stomach can reach as low as 1.5 and the pH in the small intestine can reach as high as 8.5. Our formulation also contains Ionic Trace Minerals which give digestive enzymes more enzymatic potential. The minerals act like cofactors that increase the utilization of the enzymes, which means more enzymatic strength out of each enzyme.

Our enzymes are designed to improve digestion of foods whether cooked, processed or natural. They also help eliminate toxins from the blood by breaking down undigested foods. Almost all of the food we eat (90% or higher) is composed of proteins, carbohydrates, or fats. Therefore a good quality digestive enzyme should contain a large amount of protease, amylase, lipase, and acid stable protease. These three ingredients should be the first three ingredients looked at when comparing digestive enzymes. The other enzymes in the formulation are important for the proper assimilation of less common but essential nutrients. This is a high activity formulation designed to be what we believe as the most potent and well rounded digestive enzyme on the market.

## **How to compare different companies Digestive Enzymes:**

Our digestive enzyme formulations are listed in units of activity. The potency of a digestive enzyme product is determined by the units of activity. The units of activity express the strength of the enzymes in the formulation. Another way to say this is that the more units of activity in a formulation, the more food it is capable of digesting. Units of activity are based on the Food Chemical Codex (FCC), Academy of Sciences and accepted by the American Food Industry. For example, the amount of Protease in our HP270V is 150,000 HUT. This means that each capsule has 150,000 units of activity. Using these units of activity to compare different digestive enzymes is crucial. The units of activity in a product are what counts, not the number of milligrams or another measuring system. What's important is the amount of food the product can digest. When comparing our product with others, and they don't use the Food Chemical Codex (FCC), it's almost impossible to compare the two products. So when using other products that don't use the Food Chemical Codex, ask them what is the activity level equivalent to the Food Chemical Codex.

It is impossible to compare proprietary blend products to any other. A proprietary blend is a mixture of the ingredients stated in the blend. The only thing the product states is the total amount of blend.

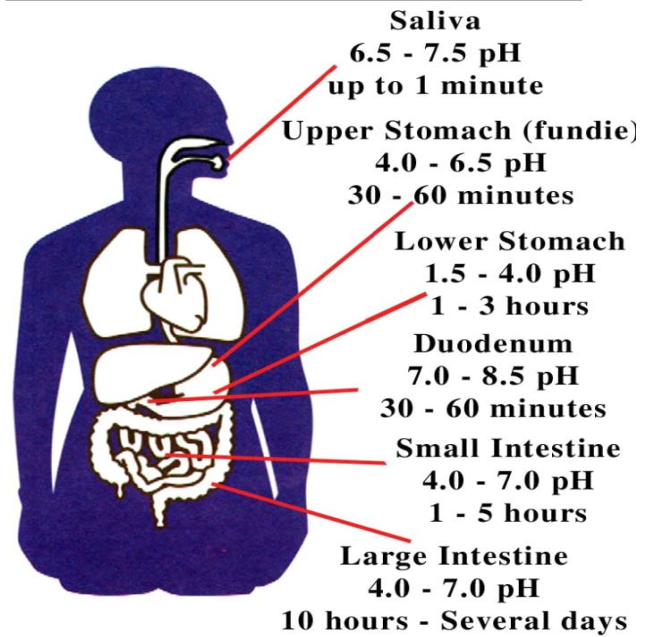
They don't state the amount of each ingredient or its activity level. Therefore, you don't know what the activity level of each enzyme is, and this is the only measurement that is used when the supplier sells to the manufacturer for encapsulating the enzyme. For example, the ingredient supplier of the enzyme can sell 250mg that would equal 25,000 FCC/HUT of protease enzyme, or 250mg that would equal 150,000 FCC/HUT of protease enzyme. In this example there is a 6 time difference in the amount of enzyme strength.

This is how some nutritional companies might mislead their customers in order to increase their profit margin. They use lower cost ingredients, and formulate a product with weaker/lower activity enzymes and label the product as a proprietary blend or list the ingredients individually in mg. So when considering to buy a product that states a proprietary blend or ingredients listed in mg, ask for a copy of the certificate of analysis that comes from the lab. Don't let yourself be misled by a company using different terminology. Always know the quality/activity level of each ingredient in the product. Now take a look for yourself and see how our product stands up next to others sold nationwide. Ours is superior in a number of ways; quality, results, value, cost, and most importantly, honesty. We don't mislead our customers.

**The diagram illustrates the average time food spends in each part of the digestive system along with the average pH.**

The pH is a way of measuring how acidic or alkaline the body is. The pH in the human digestive tract varies greatly. The pH of saliva is usually between 6.5 to 7.5. After we chew and swallow food it then enters the upper portion of the stomach which has a pH between 4.0 to 6.5. This is where “predigestion” occurs while the lower portion of the stomach is secreting hydrochloric acid (HCl) and pepsin until it reaches a pH between 1.5 to 4.0. After the food mixes with these juices it then enters the duodenum (small intestine) where the pH changes to 7.0 to 8.5. This is where 90% of the absorption of nutrients is taken in by the body while the waste products are passed out through the colon (pH 4.0 to 7.0).

**The Human Digestive Tract pH Range Chart**



Below is a list of the ingredients in the **HP270V** and **HP90V** digestive enzymes. The list below shows the type of enzyme and what types of food it digests. Also shown is the pH range in which the enzyme is capable of functioning. For example, Acid Stable Protease has an operating pH range from 2 to 5 and is capable of breaking down protein in both the upper and lower stomach. Protease has an operating pH range from 4 to 10 which means that it can break down protein in both the small and large intestine. Another example, Lipase has an operating pH range from 3 to 8 and is capable of breaking down fats in the upper stomach, duodenum, small and large intestine. It is important that a digestive enzyme product is capable of functioning throughout the entire digestive system’s pH range.

Ingredients	1 capsule	Function of Each Enzyme
<b>Protease</b> - pH range 4 to 10	<b>150,000</b> FCC/HUT	Breaks down protein. (beef, chicken, fish, vegetable protein)
<b>Acid Stable Protease</b> - pH range 2 to 5	<b>500</b> FCC/SAPU	Breaks down acidic protein. (found in various meats)
<b>Bromelain</b> - pH range 3.5 to 8	<b>100</b> GDU	Breaks down proteins.
<b>Amylase</b> - pH range 4 to 10	<b>20,000</b> SKB	Breaks down Carbohydrates, Starches, and Sugars. (bread, potatoes)
<b>Malt Diastase</b> - pH range 4 to 9	<b>250</b> FCC/DP	Breaks down complex and simple sugars.
<b>Lipase</b> - pH range 3 to 8	<b>5,000</b> FCC/FIP	Breaks down fats and oil. (triglycerides and other lipids)
<b>Cellulase</b> - pH range 2.7 to 5.7	<b>3,500</b> FCC/CU	Breaks down fibers in fruits and vegetables.
<b>Hemicellulase</b> - pH range 2 to 8	<b>1,000</b> FCC/HCU	Digests vegetables. (breaks down hemicellulose in cell walls)
<b>Invertase</b> - pH range 3.5 to 5.5	<b>800</b> Sumner	Breaks down table sugar.
<b>Lactase</b> - pH range 3 to 9	<b>500</b> FCC/ALU	Breaks down lactose. (cheese, milk, dairy products)
<b>Phytase</b> - pH range 2 to 7	<b>4</b> U	Breaks down phytate which negatively binds important minerals.
<b>Pectinase</b> - pH range 2 to 7	<b>2,000</b> AJDU	Breaks down pectin. (Pectin –important nutrient in fruits)
<b>Ionic Trace Minerals with Alfalfa</b>	<b>30</b> MG	Increases the utilization of enzymes.

Information in this product brochure is provided for informational purposes and is not meant to substitute for the advice provided by your own physician or other medical professional. You should not use the information contained herein for diagnosing or treating a health problem or disease, or prescribing any medication. You should read all products packaging carefully. If you have or suspect that you have a medical problem, promptly contact your health care provider. The statements in this product brochure have not been evaluated by the Food & Drug Administration. The statements in this product brochure are not intended to diagnose, treat, cure or prevent any disease. The information contained in this literature was derived from medical, nutritional, and media publication.

## **How we choose which ingredients to use in our digestive enzyme products.**

When most companies formulate a digestive enzyme product, they'll buy all of the ingredients from **ONE** ingredient supplier. (There are many ingredient suppliers.) Then the ingredients are sent to the manufacturer to be encapsulated and bottled before being shipped to the retail or wholesale company. The problem with this is that all of the enzymes such as protease, amylase, lipase, etc... come from **ONE** supplier. This supplier may sell for example, the best protease or amylase on the market but not the highest quality lipase or lactase. Therefore, their product may contain a few high quality ingredients but also contain some lower quality ingredients.

All of us come across this in our lives on a daily basis. For example, a vehicle manufacturer may produce the best pick-up trucks, but a different vehicle manufacturer may produce the best cars. We recognize this and when formulating our digestive enzymes we search around for the highest quality ingredients. We purchase the best ingredients from **SEVERAL** different ingredient suppliers and send them to our manufacturer for encapsulation and bottling. This ensures that every ingredient in our product is of the highest quality.

When choosing which ingredient suppliers to use, we have **SEVERAL** of them send us samples of the highest quality enzymes they sell. Such as protease, amylase, lipase, etc... After determining which enzymes are the highest quality, we formulate our enzyme products. This process leads us to using several different ingredient suppliers instead of only one like most companies. This is how we formulate higher quality digestive enzyme products.

## Comparison Chart

Listed below are the main and most important enzymes in each product that we believe for breaking down Proteins, Carbohydrates, Fats and Fiber. Below is what each company's capsule or tablet contains. There are other enzymes in our product as well as the other companies, but there is not enough room to list them all. If you would like another product added, please send us an empty bottle and the retail price and we will add it.

Names of Companies and their product name	Protease	Acid Stable Protease	Amylase	Lipase	Cellulase	Retail Cost	Cost per Capsule
<b>Allegany Nutrition Digestive Enzymes HP270V</b> one capsule	150,000 HUT	500 SAPU	20,000 SKB	5,000 FIP	3,500 CU	\$65.00 for <b>**270 capsules**</b>	\$.24 each
<b>Allegany Nutrition Digestive Enzymes HP90V</b> one capsule	150,000 HUT	500 SAPU	20,000 SKB	5,000 FIP	3,500 CU	\$28.00 for 90 capsules	\$.31 each
Garden of Life <b>Q-Zyme Ultra</b> one capsule	80,000 HUT	234 SAPU	25,000 DU	5,000 FIP	725 CU	\$44.95 for 90 capsules	\$.50 each
Emzymedica <b>Digest Gold</b> one capsule	80,000 HUT	None - not listed	23,000 DU	3,500 FIP	3,000 CU	\$75.95 for 180 capsules	\$.42 each
<b>Allegany Nutrition Digestive Enzymes MF90</b> one capsule	75,000 HUT	175 SAPU	12,000 SKB	2,000 FIP	1,000 CU	\$24.00 for 90 capsules	\$.27 each
Emzymedica <b>Digest</b> one capsule	42,000 HUT	None - not listed	12,000 DU	500 FIP	200 CU	\$25.95 for 90 capsules	\$.29 each
Nature Sunshine <b>High Potency Protease</b> one capsule	180,000 HUT	None	None	None	None	\$44.95 for 60 capsules	\$.75 each
Nature Sunshine <b>Proactazyme Plus</b> ****two capsules contain****	21,000 HUT	15 SAPU	4,200 SKB	24 FIP	125 CU	\$26.90 for 100 capsules	\$.26 each
Cell Tech <b>E-12-Super Enzyme</b> one capsule	16,000 HUT	6 SAPU	5,750 SKB	225 FIP	100 CU	\$51.00 for 180 capsules	\$.28 each
Nutraceutical Science Institute <b>Digestive Enzymes</b> one capsule	82,000 HUT	None - not listed	8,000 SKB	90 FIP	600 CU	\$30.95 for 90 capsules	\$.34 each
Houston Nutraceuticals Inc. <b>HN-Zyme Prime</b> one capsule	20,000 HUT	15 SAPU	12,000 SKB	200 FIP	Not Listed	\$20.00 for 90 capsules	\$.22 each
New Sun <b>Master Zyme</b> one capsule	28,000 HUT	None - not listed	13,000 SKB	120 FIP	400 CU	\$25.95 for 100 capsules	\$.26 each
Nature Sunshine <b>Food Enzymes</b>	Animal & Plant Enzymes					\$22.85 for 120 tablets	\$.19 each
New Sun <b>Ultra Enzymes</b>	Animal Enzymes					\$22.95 for 100 tablets	\$.23 each
Nature's Plus <b>Ultra-Zyme</b>	Animal Enzymes					\$28.10 for 180 tablets	\$.16 each