

# HOUSTON ENZYMES

The **AUTHORITY** on Enzymes®

## Enzyme Products Formulated by Dr. Devin Houston, PhD Biochemist



## Which Enzyme Product is Right for You?

*Devin Houston, Ph.D.*

### *Don't know where to start?*

If unsure as to which enzyme product is needed, use a broad-spectrum formula such as Zyme Prime or TriEnza.

Adjusting to **Zyme Prime** is not difficult. Zyme Prime is mild and low in protease (protein digesting enzymes). Zyme Prime should not cause discomfort and is an excellent starter product for the sensitive gut.

If desired results are not observed using Zyme Prime, either increase the dose, add another product (AFP-Peptizyde or No-Fenol) or switch to TriEnza.

**TriEnza** is a broad-spectrum product, containing enzymes from

AFP-Peptizyde for proteins, enzymes from Zyme Prime for fats & carbohydrates, and ½ the xylanase from No-Fenol for certain fruits and vegetables. TriEnza is higher in proteases than Zyme Prime. TriEnza has DPP IV activity, unlike Zyme Prime and, like AFP-Peptizyde, may be an alternative to the Gluten-Free, Casein-Free (GFCF) diet.

Recommended dosing for TriEnza is 1 or 2 capsules with meals.

### **Considering the Gluten-Free, Casein-Free Diet?**

Many of our customers use the Gluten-Free, Casein-Free (GFCF) diet for their children with special needs. If the parent complains about the difficulty of doing the diet, or the child is wanting more freedom to eat “like his friends”, or the parent wishes to improve gluten- and casein-connected behaviors, then consider the high-protease **AFP-Peptizyde**. One capsule contains very potent quantities of DPP IV peptidase plus additional proteases.

AFP-Peptizyde was one of our original products invented as an alternative for the GFCF diet. AFP-Peptizyde and TriEnza are high-protease, with high DPP IV activity. TriEnza is a newer combination product, but requires 2 capsules to equal the protease activity of one AFP-Peptizyde capsule.

Best to start these high-protease products with low and slow dosing. If the child is already on the GFCF diet, the parent should not change the diet until fully adjusted to enzymes.

These products are not used for celiac disease. No enzyme product is available for celiac disease, or for “cheating” on a celiac diet, in any form.

### **Loose stools, low weight, picky eater, carb craver, gas & bloating?**

For concerns like loose stools, low weight, picky eater, or carb craver, consider using **Zyme Prime** or **ZyCarb**.

Zyme Prime is excellent for firming stools and breaking down carbohydrates. ZyCarb is similar, but less firming.

### **Food-related intolerances?**

Skin rashes and rough patches on elbows while not restricting dietary gluten may be indicators of gluten intolerance. Better digestion of gluten can be accomplished through the use of protease enzymes.

**AFP-Peptizyde** (or **TriEnza**) is recommended.

### **Is Constipation a Problem?**

If so, avoid using Zyme Prime alone, as it decreases the fecal mass and firms the stool. If this is an issue, try adding the No-Fenol product as it reduces stool firmness.

**No-Fenol** breaks down fiber which may help soften the stool. No-Fenol can be used alone or in combination with other enzyme products to counter their stool-firming tendencies.

**ZyCarb**, which contains the enzymes found in Zyme Prime plus xylanase, may be a better

product than Zyme Prime for those with occasional constipation. No-Fenol may be added to any other enzyme product to lessen any stool-firming tendencies.

### **Red cheeks and/or ears after eating certain fruits?**

This can be a phenolic intolerance that may be helped by using No-Fenol.

“Shiners” under the eyes may also be an indicator that phenolic foods are a problem.

### **Fats or oils causing digestive discomfort?**

Lypazyme is formulated to help break down triglyceride fats while still in the stomach. Faster fat breakdown prevents the delay in stomach emptying usually associated with high-fat meals. Lypazyme is helpful when supplementing with fish oils and other sources of beneficial fats.

**As with any supplement, results can vary with the individual and there is always the exception. But most can use the above as a guide for starting enzymes. The great thing about enzymes is that they are not harmful at any level of dosing, so you can experiment to find the best combination for your particular needs.**

## TriEnza



- **Combination of AFP-Peptizyde, Zyme Prime & No-Fenol**
- **Broad-spectrum**
- **Contains DPP IV enzyme for exorphin peptides**

TriEnza is an economical combination of our best enzymes. Two capsules of TriEnza contain a blend of 1 capsule AFP-Peptizyde, 1 Zyme Prime and 1/2 capsule No-Fenol (xylanase). TriEnza aids in digestion of food proteins; including gluten, casein, and soy; starches; carbohydrates; sugars (including lactose); fats.

TriEnza contains DPP IV (dipeptidyl peptidase IV), the only enzyme known to break down casomorphin (from casein) and gluteomorphin (from gluten). TriEnza is safe with no toxicity demonstrated at any dosing level. Other enzymes and supplements may be given with TriEnza. No added cellulase enzyme minimizes interference with timed-release medications.

### Recommended Use

**2 capsules or 4 chewable tablets or 1/4 teaspoon powder** usually suffices for most meals. More may be given as needed.

**May be used as an alternative to the gluten-free/casein-free diet (GFCF).**

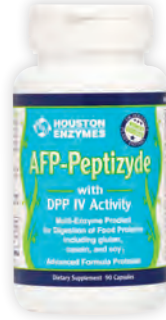
### Serving Size: 2 Capsules or 4 Chewable Tablets or 1/4 teaspoon Powder

Peptidase with DPP IV .....	50,000	HUT
DPP IV .....	1,200	DPPU
Protease 4.5 .....	65,000	HUT
Protease 6.0 .....	25,000	HUT
Amylase .....	12,000	DU
Glucoamylase .....	25	AGU
Alpha-galactosidase .....	200	GalU
Xylanase .....	16,000	XU
Beta-glucanase .....	30	BGU
Lactase .....	1500	ALU
Lipase .....	500	FIP

Other Ingredients: Vegetable capsule (cellulose and water), and microcrystalline cellulose. For chewable tablet and powder ingredients, see container or website.

HN005-90 .....	90	capsules
HN005-180 .....	180	capsules
HN005-T180 .....	180	chewable tablets
HN005-P180 .....	180	dose powder

## AFP-Peptizyde™



- **Concentrated to digest proteins**
- **Contains DPP IV enzyme for exorphin peptides**
- **Increases breakdown of casein, gluten, and soy proteins**

AFP-Peptizyde™ is an Advanced Formula Protease (AFP) version of our original Peptizyde™ for gluten, casein, soy and other proteins. AFP-Peptizyde is a lower odor/taste formula with no loss in protein-degrading power. The enzymes are derived from fungi; no fungal matter is present in the product.

AFP-Peptizyde contains DPP IV (dipeptidyl peptidase IV), the only enzyme known to break down casomorphin and gluteomorphin. Working only on food proteins, AFP-Peptizyde is safe with no toxicity demonstrated at any dosing level. Other enzymes, supplements and medications may be given with AFP-Peptizyde.

### Recommended Use

**1 to 2 capsules or 2 to 6 chewables** usually suffice for most meals. More may be given as needed.

**May be used as an alternative to the gluten-free/casein-free diet (GFCF).**

### Serving Size: 1 Capsule or 2-3 Chewable Tablets

Peptidase with DPP IV .....	50,000	HUT
DPP IV .....	1,200	DPPU
Protease 4.5 .....	25,000	HUT
Protease 6.0 .....	25,000	HUT

Other Ingredients: Vegetable capsule (cellulose and water). Contains cellulose and medium chain triglycerides as filler. For chewable tablet ingredients, see website or bottle.

HN004-S90 .....	90	capsules, cellulose
HN004-T120 .....	180	chewable tablets

## Zyme Prime



- **Better digestion of carbs & fats**
- **Great for lactose intolerance**
- **Helps gas and bloating**
- **Tends to firm stools**

Zyme Prime is targeted for carbs and fats. While not as potent for proteins as AFP-Peptizyde, this formula excels for carbohydrate digestion. Contains protease for proteins, lactase for dairy lactose, and amylase and other carbohydrases for better starch digestion.

Reduces bloating and gas caused by beans, broccoli, etc. Has lipase to help aid in digestion of triglyceride fats. Firms up loose stools.

### Recommended Use

**1 to 3 capsules or 2 to 6 chewables** are sufficient to help with most meals. Decrease dose if constipation occurs – or add No-Fenol.

### Serving Size: 1 Capsule or 2 Chewable Tablets

Amylase .....	12,000	DU
Protease 4.5 .....	40,000	HUT
Glucoamylase .....	25	AGU
Alpha-Galactosidase .....	200	GalU
CereCalase® .....	400	MU
Lactase .....	1,500	ALU
Lipase .....	200	FCCLU (500 FIP)

CereCalase® contains hemicellulase, beta-glucanase and phytase, and is a registered trademark of National Enzyme Company.

Other Ingredients: Vegetable capsule (cellulose and water). Contains cellulose and medium chain triglycerides as filler. For chewable tablet ingredients, see container or website.

HN002-S90 .....	90	capsules
HN002-T180 .....	180	chewable tablets



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## ZyCarb



- **Digestion of carbs & fats with less stool-firming**
- **Xylanase for phenolic foods**
- **Great for lactose intolerance**
- **Helps gas and bloating**

ZyCarb excels at carbohydrate digestion with less firming of stools than Zyme Prime. Contains lactase for dairy lactose digestion, and amylase and other carbohydrases for better starch digestion. ZyCarb reduces bloating and gas caused by lactose intolerance, beans, broccoli, etc. Contains lipase to aid in digestion of triglyceride fats. ZyCarb has some protease to breakdown proteins, though not as potent for proteins as AFP-Peptizyde.

The xylanase in ZyCarb helps digest fruits and vegetables without the problems thought to be associated with polyphenolic compounds. All plants contain some degree of phenolic compounds, which are essential to many of life's processes. ZyCarb may help digest phenolic foods such as tomatoes, apples, grapes, berries and citrus. ZyCarb breaks down plant fiber and promotes an environment for the growth of helpful gut bacteria.

### Recommended Use

**1 to 3 capsules** are sufficient to help with most meals.

### Serving Size: 1 Capsule

Amylase.....	8,000	DU
Glucoamylase.....	50	AGU
Alpha-galactosidase .....	200	GalU
Lactase .....	1,500	ALU
Lipase.....	200	FIP
Xylanase.....	12,500	XU
Protease SP 4.5 .....	50,000	HUT

Other Ingredients: Vegetable capsule (cellulose and water) and maltodextrin.

**HN006 .....120 capsules**

## No-Fenol



- **Better breakdown of fruits and vegetables**
- **Digests phenolic foods**
- **May soften stools**

No-Fenol helps the digestion of fruits and vegetables without the problems thought to be associated with polyphenolic compounds. All plants contain some degree of phenolic compounds, which are essential to many of life's processes.

No-Fenol may help with tolerance of phenolic foods such as tomatoes, apples, grapes, berries and citrus. In some cases, tolerance to artificial colorings and flavors was increased. No-Fenol breaks down plant fiber and promotes a suitable environment for the growth of helpful gut bacteria. No-Fenol may make stools softer (see Recommended Use).

No-Fenol contains Zyphenase™; a proprietary blend of xylanase, hemicellulase, gluconase, and phytase.

### Recommended Use

**½ to 1 capsule or 1 to 2 chewables** usually suffice for most meals. Decrease if stools become too soft, or add Zyme Prime. **No-Fenol contains higher amounts of cellulase, which may interfere with sustained release medications that use cellulose, hydroxypropyl cellulose, and /or hypromellose as part of the timed-release mechanism.**

Use No-Fenol for foods that may be high in fiber or phenolic compounds.

### Serving Size: 1 Capsule

Proprietary enzyme blend 288 mg containing:		
Xylanase.....	32,000	XU
CereCalase®.....	1,500	MU

CereCalase® contains hemicellulase, gluconase, and phytase, and is a registered trademark of National Enzyme Company.

Other Ingredients: Vegetable capsule (cellulose and water), cellulose and medium chain triglycerides as filler. For chewable tablet ingredients, see website or bottle.

**HN003-S90.....90 capsules**

**HN003-T180.....180 chewable tablets**

## Lypazyme



- **Support digestion of triglyceride fats**
- **Multiple types of lipase enzymes**
- **Helps gas and bloating from fats and oils**

Lypazyme is a potent combination of 3 different lipase enzymes. Lypazyme is unique in the use of multiple forms of lipase to ensure complete breakdown of the triglyceride fats found in foods and many supplements. Using only one type of lipase may result in formation of mono- and diglycerides rather than complete breakdown into beneficial short-chain fatty acids.

Plant-derived lipase is resistant to stomach acid and protease activity which means that fat breakdown can begin in the stomach. Lipase can help with the gas and bloating from high-fat meals and supplements.

### Recommended Use

**1 to 2 capsules per meal as needed.**

### Serving Size: 1 Capsule

Lipase 1 .....	250	FIP
Lipase 2 .....	600	FIP
Lipase 3 .....	150	FIP

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Total Units Lipase Activity ..... 1,000 FIP

Other Ingredients: Vegetable cellulose and water.

**HN007-120.....120 capsules**

## Enzyme Dosing

The amount of enzyme taken in a dose is dependent upon the amount eaten, not age or body weight. The more enzyme taken, the faster the food is broken down. Experimentation with dosing is encouraged to find the optimal dose for your diet.

Optimal dosing time is usually before or at the beginning of the meal, so that maximal contact time between enzymes and food can occur. **However, you may take the enzymes at any point during the meal or soon after and still obtain the majority of benefits.**

**To begin**, give enzymes with only 1 meal per day for a few days. Increase gradually until you are taking a full dose with every meal. More can be taken for those foods that cause dietary problems such as bloating, gas, heaviness, etc.

### What happens if I take an enzyme supplement and don't eat?

Nothing. An enzyme is specific for one substance; if that substance is not present, the enzyme does nothing and simply continues along the digestive tract, eventually being degraded by enzymes in the GI tract.

**Dosing chart for starting slowly is at**  
<http://www.houston-enzymes.com/dosing>.

## Mixing Enzymes

Enzymes gradually lose their activity level once mixed in liquid or food. You can keep enzymes "good" longer by putting them in a cold drink, up to about four hours. Enzymes may be kept in a frozen drink for use later.

Foods may break down quickly when mixed with enzymes. Nut butters and cooled chocolates are better choices for preserving enzymes for later use. The oil in nut butters and chocolate helps to keep the enzymes encapsulated. Enzymes mixed with foods may be frozen for about two weeks. Enzymes remain active up to about 125-130 degrees Fahrenheit, but higher temperatures will inactivate them. Enzymes can be added to foods after cooking, just prior to serving. Enzymes are not harmed at all by cold temperatures, in fact; the colder enzymes are kept, the longer they keep their activity.

## What are Enzymes?

Enzymes are specialized proteins that accelerate biochemical reactions. The enzyme itself does not change during the reaction, but changes one compound (known as the "substrate") into another (known as the "product").

Digestive enzymes include:

- **proteases/peptidases**—  
break down proteins/peptides
- **carbohydrases**—  
break down carbohydrates
- **lipases**—  
break down triglyceride fats

Proteins are degraded to peptides and amino acids, carbohydrates to sugars, and triglycerides to fatty acids by breaking specific chemical bonds within the compound.

Most dietary enzyme supplements are derived from plants such as papaya, pineapple, and *Aspergillus* fungi. The enzymes derived from *Aspergillus* have been purified from the fungal matter using from 8 to 12 different methods of purification.

No fungal matter is present in our enzyme products. If you have a known allergy to *Aspergillus* proteins, then caution should be used in taking any fungal-derived enzyme product, however, the allergenic portions of *Aspergillus* are usually those parts of the fungi removed from the enzymes during processing.

Plant enzymes are stable in acidic conditions, and begin to break down food while it is still in the stomach.

## Quality Standards

Our enzyme products meet the quality standards established by the U.S. Food and Drug Administration's ruling for current good manufacturing practices (CGMPs). This means our enzymes are manufactured consistently as to identity, purity, strength, and composition.

## Enzyme Quick Facts:

- **Enzymes break down proteins, carbs and fats.**
- **Enzymes are safe in long-term use.**
- **Enzymes are effective for children as well as adults.**
- **Enzymes may be an alternative to some special diets, such as GFCF and SCD.**
- **Take enzymes near the beginning of every meal.**
- **Available in capsules, chewable tablets and powder.**
- **Houston Enzymes is the only company with the formulation expertise of a PhD enzyme biochemist.**



**For Frequently Asked Questions and Articles on Getting Started, Mixing Enzymes, and Giving at School**

These statements have not been evaluated by the FDA. These products are not intended to diagnose, cure, treat, or prevent any disease. Peptizyde™ is a trademark of Houston Nutraceuticals, Inc.