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A lack of digestive enzymes can lead to a variety of gastrointestinal (GI) symptoms. It can also leave you malnourished, even if you eat a nutritious diet.

Symptoms of Digestive Enzyme Insufficiency

- Belly pain or cramps.
- Bloating.
- Diarrhea.
- Gas.
- Oily stools (bowel movements)
- Unexplained weight loss.
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    - **What happens if your enzymes are too low?**
    - Enzyme deficiency results in accumulation of toxic compounds that may disrupt normal organ functions and cause failure in producing crucial biological compounds and other intermediates. The MED related disorders cover widespread clinical presentations and can involve almost any organ system

What are digestive enzymes?

Your body makes enzymes in the digestive system, including the mouth, stomach, and small intestine. The largest share is the work of the pancreas.

Digestive enzymes help your body break down carbohydrates, fats, and proteins from food. This is necessary to allow for the absorption of nutrients and to maintain optimal health. Without these enzymes, the nutrients in your food go to waste.

Certain health conditions can interfere with the production of digestive enzymes.

If the pancreas cannot make enough digestive enzymes, this is called exocrine pancreatic insufficiency (EPI), and this can have implications such as poor digestion and malnutrition. When that happens, you can add digestive enzyme replacement before meals to help your body process foods effectively.

Some digestive enzymes require a doctor's prescription, and others are sold over the counter (OTC).

Types of digestive enzymes

The main types of enzymes are:

- **Amylase.** This enzyme breaks down carbohydrates, or starches, into sugar molecules. Insufficient amylase can lead to diarrhea.
- **Lipase.** This works with liver bile to break down fats. If you don't have enough lipase, you'll be lacking in fat-soluble vitamins such as A, D, E, and K.
- **Protease.** This enzyme breaks down proteins into amino acids. It also helps keep bacteria, yeast, and protozoa out of the intestines. A shortage of protease can lead to allergies or toxicity in the intestines

- Some prescription enzymes contain pancrelipase, which is made up of amylase, lipase, and protease. These medications are usually coated to prevent stomach acids from digesting the medication before it reaches the intestines.

- Dosage varies from person to person based on weight and eating habits. Your doctor will want to start you at the lowest possible dose and make adjustments as needed.

- OTC enzyme supplements can be found wherever dietary supplements are sold, including online. They may be made from animal pancreases or plants such as molds, yeasts, fungi, or fruit.
- OTC digestive enzymes are not classified as medications, so they don't require FDA approval before going on the market. Ingredients and dosages in these products may differ from batch to batch.

How do digestive enzymes work?

When the pancreas doesn't naturally secrete digestive enzymes, it affects your body's ability to break down the foods you eat and absorb nutrients. This can lead to malnutrition as well as symptoms such as bloating, cramping, gassiness, and diarrhea.

Replacement digestive enzymes take the place of natural enzymes, helping to break down carbohydrates, fats, and proteins from the foods you eat. Then the nutrients are absorbed into your body through the wall of the small intestine and distributed through the bloodstream.

As a result, replacement digestive enzymes can help prevent malabsorption and related digestive discomforts.

Because they're meant to mimic your natural pancreatic enzymes, replacement digestive enzymes must be taken just before you eat. That way, they can do their work as food hits your stomach and small intestine.

In some cases, you may break up the dose. For example, if you're eating a large meal that takes longer than usual to eat, or if you're a slow eater, your doctor may recommend taking half the dose at the start of the meal and the rest halfway through your meal.

If you don't take replacement digestive enzymes with food, they won't be of much use.

Potential side effects

The most common side effect of replacement digestive enzymes is constipation. Other less common symptoms may include:

- nausea
- abdominal cramps
- diarrhea

Digestive enzymes are essential to nutrition and overall good health. They help your body absorb nutrients from the foods you eat. Without them, certain foods can lead to uncomfortable symptoms, food intolerances, or nutritional deficiencies.

Certain GI disorders can lead to a lack of enzymes, but enzyme replacement therapy may be an effective option.

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