

How do you digest your food?

When you eat, you chew and swallow foods and your stomach partially digests it, and then slowly releases it into the first part of your small intestine.

When food enters the small intestine your liver and gallbladder release bile into your intestine to help digest fats. At the same time, your pancreas releases bicarbonate and enzymes into your intestine to help digest fats, proteins and carbohydrates.

The nutrients, vitamins and minerals from this digested food are then absorbed into your blood and used to nourish your cells.

If your pancreas is not working well, your body may not be able to absorb nutrients, vitamins and minerals to provide the nutrition you need.

How do you know if your pancreas may not be working well?

The following symptoms may be a sign that your pancreas is not working well and may lead to weight loss, muscle wasting, fatigue and vitamin and mineral deficiencies:

- Pale or light colored stool
- Foul smelling gas and/or bloating
- Floating, greasy, oily stools difficult to flush
- Burping, indigestion, reflux
- Cramping after meals
- Frequent or loose stools

If you have these issues, you may need pancreatic enzymes to help digest and absorb nutrients from your food.

What are Pancreatic Enzymes?

Pancreatic enzymes are prescription medications that help do the work of your pancreas. They come in pills or capsules and are taken with meals and snacks.

There are three main types of pancreatic enzymes:

1. **Lipase** to digest dietary fat. Fat is mostly found in:
 - oils
 - animal products (meat, poultry, fatty fish, dairy products)
 - nuts/seeds and nut butters
 - avocados
 - desserts, baked goods
 - fast foods
 - many dips, sauces and gravies
2. **Protease** to digest dietary protein. Protein is mostly found in:
 - meat, fish, poultry, dairy products
 - nuts/seeds and their butters
 - seafood
 - protein powders
 - soy products
 - beans and lentils
 - some cereals
3. **Amylase** to digest dietary carbohydrates. Carbohydrates are mostly found in:
 - breads, cereal and grains
 - fruits and vegetables
 - beans and lentils
 - pasta
 - candies, juices and sweeteners (sugar, honey, jam, syrup)

You will need a prescription from your doctor, gastroenterologist, surgeon or nurse practitioner for digestive enzymes.

In Canada, there are 4 products available. Each contains a mixture of enzymes - lipase, protease and amylase:

Creon (10 & 25)

Pancrease MT (4, 10, 16)

Cotazym ECS (8 & 20)

Viokase (10, 20)

The number beside the name of the product tells you the number of “thousands lipase units” in each capsule. For example, Creon 25 has 25,000 units of lipase per capsule. As a general rule, take 20,000 to 75,000 units of lipase per meal and 10,000 to 50,000 units of lipase per snack.

You may also need to take medication to decrease acid in your stomach along with your enzymes, especially if they are non-enteric coated enzymes. Ask your doctor or nurse practitioner if this is something you need.

How do I take the enzymes?

Your doctor, pharmacist, nurse or dietitian will work with you to find the best dosage of enzymes for you and guide you on how to take them. In general terms:

- Store the enzymes in a cool, dry place and out of reach of children.
- Follow the directions and advice from your pharmacist as enzymes can interfere with other medications. Check the expiry date.
- Start at a low dose of enzymes and increase slowly as needed. *You may have bloating, cramping, fullness, nausea when first taking enzymes.*
- Swallow capsules whole.
 - Take with cold or room temperature liquids as hot liquids may damage the enzymes making them less effective.
 - Do not crush or chew your pancreatic enzyme.
 - Avoid holding enzymes in your mouth as they can cause irritation and sores.
 - If it is hard to swallow pills, you may open the capsule and mix contents in your food and eat your food right away. Talk to your pharmacist on how best to take them.
- Do not take the capsules all at once.
 - Start by taking a capsule with your first bite of food and then take them throughout the meal to make sure the enzymes are properly mixed with food in your intestines.
 - Do not take the enzymes at the end of the meal as they will not be effective.
- Take enzymes with every meal or snack that has fat and protein in it. Snacks that are low in fat and protein do not require enzymes (fruit juice, popsicle, pop, hard candy).

- You do not need to restrict your fat intake if you take your enzymes as prescribed. If you continue to have problems digesting your food, talk to your doctor or dietitian.
 - Your doctor may recommend medication to help the enzymes work better.
 - Your dietitian may suggest alternate fat sources such as coconut oils or Medium Chain Triglyceride (MCT) oil which are easier to absorb.
- Choose a variety of foods, including fruits and vegetables, whole grains and plant based/lean proteins whenever possible. Ask your dietitian if you may benefit from taking a multivitamin and mineral supplement.
- You may want to keep a record or food journal to help you figure out the number of enzyme capsules you need with each type of meal.

Example of food and enzyme record:

Time of day	Food eaten and how much	How was food prepared	Number of enzymes taken	How you felt

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This handout was developed in partnership with Pancreas Centre BC.
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