

Improving Your Digestion and Nutrition When You Have Pancreatic Cancer

This handout offers information on how:

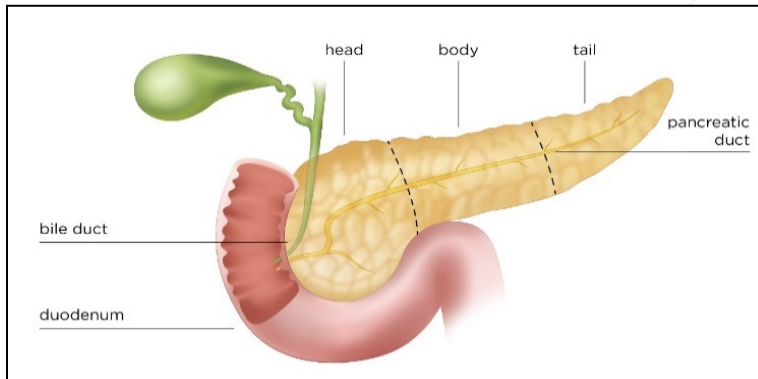
- Pancreatic cancer can affect your digestion and nutrition.
- To take digestive (pancreatic) enzymes.
- To eat well when you have pancreatic cancer.

Your pancreas:

- Helps with the digestion of your food (breaking down the food you eat for your body to use for energy, tissue growth and repair).
- Releases hormones that help regulate your blood sugars.

How pancreatic cancer can affect your digestion and nutrition

Pancreatic cancer can change the way your pancreas works. You may have cancer in the head, the body or the tail of your pancreas. See the picture of a pancreas below. How your body is affected depends on the location and size of your cancer. A cancer tumor can block your bile duct or the duct in your pancreas. This may decrease or stop the release of digestive enzymes. Bile ducts are drainage tubes that carry bile from the liver to the gallbladder and from the gallbladder to the small intestine.



Digestion of your food

- When you eat food it travels down your esophagus into your stomach.
- Your stomach has acid in it that starts to digest and break down the food.
- This digested food moves from your stomach into the first part of your small intestine (duodenum).
- As food enters your small intestine digestive enzymes are sent from the pancreas.
- Digestive enzymes mix with the food you eat. These enzymes help break down fat, carbohydrates and protein to a size small enough for your body to absorb and use.

Signs of poor food digestion (also called malabsorption)

A normal stool (poo) is soft and formed. Tell your doctor, nurse or dietitian if you have any of these changes in your stool:

1. Only occur after 2 or more days.
2. Oily or liquid stool
 - You can see oil droplets in your stool.
 - You have multiple stools a day.
 - You have loose, liquid (diarrhea) stool.
3. Floating stool
 - Your stool floats on the water in the toilet.
 - You see flakey pieces of stool.
 - Your stool is hard to flush away (pieces remain in the toilet).
4. Pale, yellow or tan coloured stool
5. Bloating and gas
 - You have lots of gas.
 - You have bloating or cramping after a meal.
 - You have foul smelling gas.
6. Unplanned weight loss even if you feel you are eating enough calories
 - You notice muscle loss.

What are digestive enzymes and how can they help me?

Digestive enzymes:

- Are made from the pancreas of pigs.
- Contain the following enzymes: lipase, amylase and protease.
- Mix with the food you eat. These enzymes help break down fat, carbohydrates and protein to a size small enough for your body to absorb and use.
- Help replace or support the enzymes your pancreas would normally make.

The number of enzymes you are prescribed might be different than another person. It may take some time to figure out how many enzymes you need to take.

How do I take my digestive enzymes?

- Take your first enzyme with the first bite of your meal or snack.
- If you take more than 1 enzyme, take them throughout your meal or snack.
- Store your enzymes at room temperature.
- Do not crush or chew your enzymes.

If you are not able to swallow your enzymes, break the capsules open and add the

contents to a food that is at room temperature such as applesauce, yogurt or mashed bananas. Drink water afterwards to ensure they are completely swallowed.

Side effects of digestive enzymes

- Most common: constipation.
- Less common: abdominal bloating, nausea, vomiting.
- Abdominal pain and diarrhea may occur but are likely caused by your cancer.

You may need to increase the number of digestive enzymes you are taking if you:

- Continue to have signs of poor digestion (see page 2).
- Eat a large meal or snack that is high in fat.
- Add extra butter, margarine, nut butter, oil, gravy or cheese to your meal or snack.

Talk to your doctor or dietitian if you think you need to increase the amount of digestive enzymes you need. Enzymes should be taken based on the amount of fat in a meal. See the chart below.

No digestive enzymes needed	Less digestive enzymes needed	More digestive enzymes needed
<ul style="list-style-type: none"> • Fruit – fresh or canned • Juice or soft drinks (any kind) • Tea or coffee without cream • Broths or consommé • Plain soda crackers or arrowroot cookies • Candy such as chewing gum, jelly beans, other hard candies • Popsicles, sorbet, fruit ices 	<ul style="list-style-type: none"> • Toast or bagel with nut butter • Cereal with 3.25% milk • Oatmeal with 3.2% milk • Egg and toast with butter or margarine • Chicken, turkey or ham sandwich • Pasta with tomato sauce • Cheese and crackers • High fat yogurt with fruit • 1/4 cup nuts • 1 to 2 chocolate chip cookies • Glass of 3.25% milk • BOOST or Ensure 	<ul style="list-style-type: none"> • 2 eggs with bacon, hash browns and toast • Pizza: 2 to 3 slices • Fried fish + chips • Hamburger or chicken fingers and fries • Turkey or chicken with gravy, mashed potatoes, vegetables and a dessert • Cream soup and a grilled cheese sandwich • Milkshake or high calorie smoothie • Croissants, doughnuts, ice cream, pies • Potato chips

Food choices high in fat

Food choices high in fat	Examples
Oils	Avocado, canola, coconut, corn, cottonseed, flax, grapeseed, olive, palm, rapeseed, sesame, safflower, soybean, sunflower
Meat	Regular ground beef, fatty cuts of beef, pork, lamb, goat, some game meat, cured meat, deli meat, sausage, hot dogs
Poultry	Dark meat (examples: drumsticks and wings) and the skin of chicken, turkey and duck
Fatty fish	Anchovies, mackerel, salmon, sardines, trout, tuna
Dairy products	Butter, buttermilk, condensed milk, cream-based soup, cheese, cream cheese, half and half, heavy cream, frozen yogurt, gelato, ghee, ice cream, kefir, margarine, milkshakes, sour cream, whipped cream, whole or 2% milk, yogurt
Nuts and nut butter	Almonds, Brazil nuts, cashews, chestnuts, hazelnuts, peanuts, pecans, pistachios, pine nuts, macadamia nuts, walnuts
Seeds and seed butter	Chia seeds, flax seeds, hemp hearts, poppy seeds, pumpkin seeds, sesame seeds, sunflower seeds, tahini paste
Dips, sauces and gravies	Aioli, alfredo, artichoke dip, béarnaise, béchamel, butter sauce, cheese sauce, crème fresh, guacamole, hollandaise, gravy, mayonnaise, margarine, pesto, salad dressing, sour cream, spinach dip, tartar sauce
Desserts	Baklava, brownies, butter tarts, cakes, cannoli, cheesecake, chocolate, chocolate sauce, cookies, crapes, croissants, crumbles, cupcakes, custard, Danishes, doughnuts, dream whip, éclairs, egg tarts, fritters, fudge, lemon tarts, muffins, pancakes, pastries, pies, puddings, macaroons, Nanaimo bars, squares, strudel, waffles, whipped cream
Fast foods	Chapattis, chicken fingers, chicken wings, chips, fried fish, fried spring rolls, French fries, nachos, onion rings, pizza, samosas, tacos
Other	Avocados, egg yolk, granola, olives

How to eat more food in a day

- Eat 6 to 8 small meals or snacks a day at scheduled times. Do this even when you are not hungry.
- Eat and drink what you enjoy.
- Drink liquids between meals and snacks to avoid fullness.
- Take snacks with you when you are away from home.
- Use ready-made meals if this is easier for you.
- Eat the largest meal when you feel hungry.
- Light exercise can help improve your appetite.
- Eat slowly.
- Chew foods well.
- Eat with other people when possible.
- Take anti-nausea medications as prescribed at the first sign of upset stomach or nausea.

How to increase the calories and protein of your meals

- Add extra fat to meals using oils, butter, margarine, cream, sour cream, mayonnaise and avocado.
- Replace water with milk when making hot cereal and cream soups.
- Eat foods high in protein at each meal such as meat, fish, eggs, nuts and nut butters, beans, lentils, tofu, milk and yogurt.
- Keep fruit and vegetables in your diet. Eat your higher calorie or protein foods first.
- Drink 8 to 10 cups of fluid each day. Include fluids such as milk, smoothies, milkshakes, chocolate milk, yogurt drinks, cream and juice.
- Choose high calorie dairy products (examples: Homogenized milk (3.25% milk fat) and high fat yogurt (2% or higher milk fat)).

Ask to talk to a registered dietitian in the cancer centre if you are not able to eat or you are losing weight.

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