

# Diet after Whipple Procedure (Pancreaticoduodenectomy)

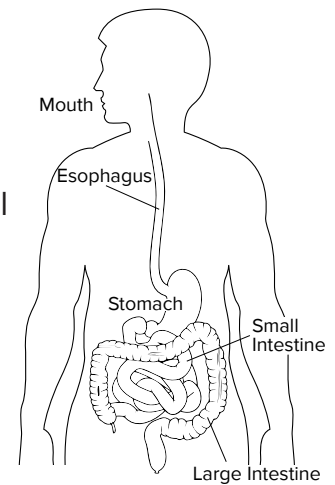
Patient name: \_\_\_\_\_ Surgery date: \_\_\_\_\_

Dietitian: \_\_\_\_\_ Contact number: \_\_\_\_\_

## Introduction

### A Review of Your Digestive Tract

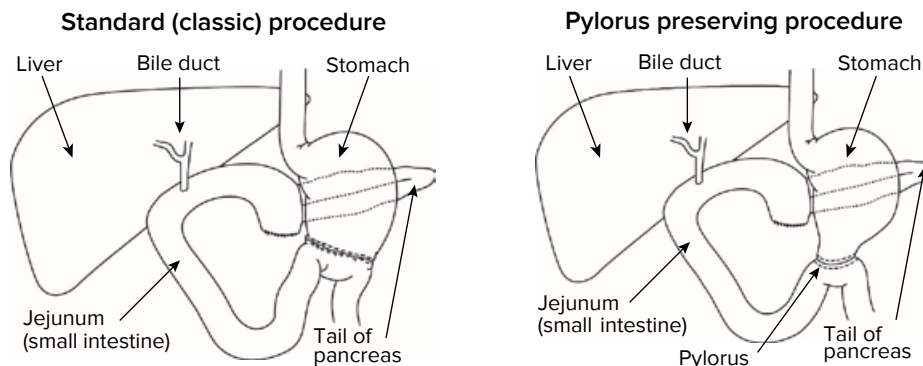
Digestion starts in the mouth. When you chew and swallow food, it goes down the esophagus and lands in your stomach. From there, the contents move to your small bowel (also known as the small intestine). Most digestion happens in this long and narrow muscular tube. The small bowel is where proteins, carbohydrates, fats, and vitamins are absorbed. The pancreas aids in digestion by producing pancreatic enzymes to help digest food in the small bowel. Next the contents enter your large bowel (also known as the large intestine or colon). The large bowel absorbs water and electrolytes, turning contents from liquid to formed bowel movements.



### What is a Whipple Procedure?

A Whipple procedure also known as a Pancreaticoduodenectomy, is the surgical removal of the head of the pancreas, part of the duodenum (a portion of the small bowel), the lower bile duct, the gallbladder, and sometimes part of the stomach.

Your surgeon may do the procedure in one of two ways:



The surgical removal of these organs may cause some people to experience symptoms after the surgery, requiring changes to their diet.

# Possible Nutrition Problems and Tips

## Delayed Stomach Emptying (Gastroparesis)

Gastroparesis is a condition where food moves through your stomach slower than normal to your small bowel. This is most likely to occur within the first 4 to 6 weeks after the procedure. Symptoms include nausea or vomiting, bloating, early satiety (fullness), decreased appetite, and weight loss. Gastroparesis is managed through diet changes and/or medications that help control nausea and vomiting or help move stomach contents faster. Diet changes are based on how severe your symptoms are. The texture, amount, frequency, and type of foods can affect how quickly or slowly they empty from your stomach .

### Tips:

- Eat 4 to 8 smaller meals or snacks each day. Try to eat every 2-3 hours.
- Chew food well to help your stomach digest your meals more quickly and easily.
- Try to sit upright for at least 1 hour after eating as gravity helps your stomach empty. Walking after meals may also help move food through your system faster.
- Drink liquids 30 to 60 minutes before or after eating as this may fill up your stomach too quickly. Sip small amounts of fluids (up to 125 ml) during meal times.
- Choose low fat solid foods as high fat meals take longer to empty from your stomach. Avoid greasy or deep fried foods. Liquid foods that contain fats do not affect gastric emptying. Do not limit these, especially if you are losing weight without trying.
- Choose lean proteins at each meal and snack, such as poultry, fish, red meat, tofu, eggs, dairy products (e.g. milk, cheese, cottage cheese, yogurt), nut butters (e.g. peanut, almond, sesame), and protein powder.
- Choose low fibre foods as high fibre foods take longer to empty from your stomach. Avoid foods high in fibre, such as legumes and beans (e.g. chickpeas, kidney beans, and lentils), whole grain cereals (e.g. bran, granola), nuts and seeds (e.g. peanut, almond, sesame), dried fruits, popcorn, and skins of fruits and vegetables. Pureed high fibre foods or cooked vegetables may be better tolerated. Do not take any products that will increase stool size such as bulk forming agents containing fibre (e.g. Metamucil®, Benefibre®) unless directed by your doctor.
- Liquids empty faster than solids and may be better tolerated. Try commercial liquid meal replacements (e.g. Boost®, Ensure®, Vega®), high protein and calorie drinks or smoothies, and minced or pureed meals if you are unable to tolerate solids. If your symptoms increase throughout the day, try solid food meals earlier in the day and switch to more liquid meals later in the day.
- Weigh yourself weekly. Talk to your doctor or dietitian if you are losing weight, without trying.



## Dumping Syndrome

Dumping syndrome is a condition where the rate of food passing through your digestive system is quicker than normal. There are 2 types of dumping syndrome. It is most likely to occur **4-6 weeks after** the procedure.

### Early Dumping Syndrome

Food and fluid passes too quickly into the small intestine. This happens 15 to 30 minutes after a meal. Symptoms include flushing, nausea, vomiting, dizziness, diarrhea, fatigue, stomach cramps, bloating, fast heartbeat, and strong desire to lie down.

### Late Dumping Syndrome

Sugar is absorbed too quickly into the blood and can cause hypoglycemia (low blood sugar). This happens 1 to 3 hours after a meal. Symptoms include sweating, fatigue, shaky, hunger, fast heart rate, and difficulty concentrating.

Tips (for both types of dumping syndrome ):

- Eat 4 to 8 smaller meals or snacks each day. Try to eat every 2-3 hours.
- Lying down for 15 minutes after a meal can help slow down the passage of food through the digestive tract.
- Combine starch and protein foods at each meal or snack (e.g. pasta with chicken, peanut butter sandwich, cheese and crackers, pita and hummus).
- Choose high fibre foods when possible (e.g. whole wheat breads, cereals, pasta or brown rice, fruit and vegetables, and legumes).
- Avoid foods high in simple sugar (e.g. juice, regular pop, sports drinks, cakes, pastries, sweet condiments such as ketchup, BBQ sauce, teriyaki sauce).
- Drink liquids 30 to 60 minutes before or after eating. Sip small amounts of fluids (up to 125 ml) during meal times.



## Decreased Pancreas Function

There are 2 possible issues that can occur with decreased pancreatic function caused by disease of the pancreas or the removal of part of the pancreas.

### Decreased Pancreatic Enzyme Production

Decreased pancreatic enzyme production can cause impaired digestion and absorption of nutrients, especially fat. Symptoms include changes in stool (e.g. loose, pale clay-coloured, greasy/oily, floating, foul smelling), weight loss, and fatigue.

Tips:

- Talk to your doctor if you have symptoms and whether you need to take pancreatic enzymes. If prescribed, take pancreatic enzymes with meals and snacks as directed.
- You should be able to eat a regular healthy diet without any fat restriction if you are taking your pancreatic enzymes as prescribed. Monitor the amount of fried or greasy food that you eat as you may need more pancreatic enzymes consuming higher fat foods. Talk to your doctor and dietitian if you continue to experience symptoms.

## Diabetes

The pancreas is also responsible for producing and releasing insulin to manage blood sugars. Diabetes is a condition in which your body is unable to produce insulin or use the insulin it produces, causing high blood sugars. Symptoms include excessive thirst, excessive hunger, tiredness, increased urination, and weight loss. Diabetes is managed with diet, exercise, and/or medications.

Tips:

- Talk to your doctor if you have symptoms and whether you need to take diabetes medication. If prescribed, take diabetes medication as directed.
- Talk to your dietitian or diabetes educator about the diet that is right for you.

## Low Nutrient Levels

Low levels of nutrients can be caused by not eating enough nutrients or by not digesting or absorbing nutrients after surgery. Most common nutrients of concern are iron, calcium, zinc, copper, selenium and Vitamins A, E, D, and K.

Tips:

- Eat a variety of foods daily.
- Talk to your doctor, dietitian, or pharmacist about taking a multivitamin and mineral supplement.

## Notes:

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If you have nutrition questions after discharge, dial 8-1-1 HealthLink BC to speak with a Registered Dietitian, weekdays from 9am-5pm.



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