

Cancer of the Pancreas



A Care Guide for Patients and Their Families

Learning you have cancer of the pancreas can be overwhelming.

You may have many questions as you are diagnosed and treated. Your Mount Carmel Cancer Nurse Navigator will guide you through your care. Your oncology nurse navigator, doctors, and other healthcare team members will answer your questions as they provide care and support to you and your family.

This guide will help you learn what you need to know throughout your care. It contains detailed information that you can refer to as you need it. Please share your questions and concerns — we are always willing to address them and want to provide you and your family with the support you need.

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Diagnosis

Mount Carmel Cancer Care Team

You will be meeting many healthcare professionals throughout your care. You may see some or all of these team members. It may be helpful to keep a list of names and numbers as well as any questions you have for them.

There are note pages at the back of this book.

Case Manager/Social Worker –

The social worker or nurse case manager helps arrange for any needed community or home care services and/or financial concerns.

Dietitian – The dietitian assists with nutrition concerns and helps you manage side effects that affect eating and nutrition.

Genetic Counselor – The genetic counselor offers assessments, education, testing, and support for people with a history of cancer in their family.

Gastroenterologist – This is a doctor who specializes in diagnosing and treating conditions in the digestive system. This doctor may perform your EUS or ERCP procedure (see pages 6–7).

Oncologist – This doctor is a specialist in diagnosing and treating cancer using chemotherapy and other types of therapies.

Oncology Nurse Navigator –

The nurse navigator is a registered nurse who specializes in the care of cancer patients and helps guide you through your cancer care, answering your questions and addressing your concerns.

Radiation Oncologist – This doctor specializes in using radiation therapy to treat cancer.

Surgeon – The surgeon operates on parts of the body that need removing or repairing.

Symptom Management

Specialist – This specialist, who is also called a palliative care doctor, manages symptoms that may be problems such as pain, diarrhea, or itching while you are in the hospital. A plan is also made to help manage these symptoms at home.



The Pancreas

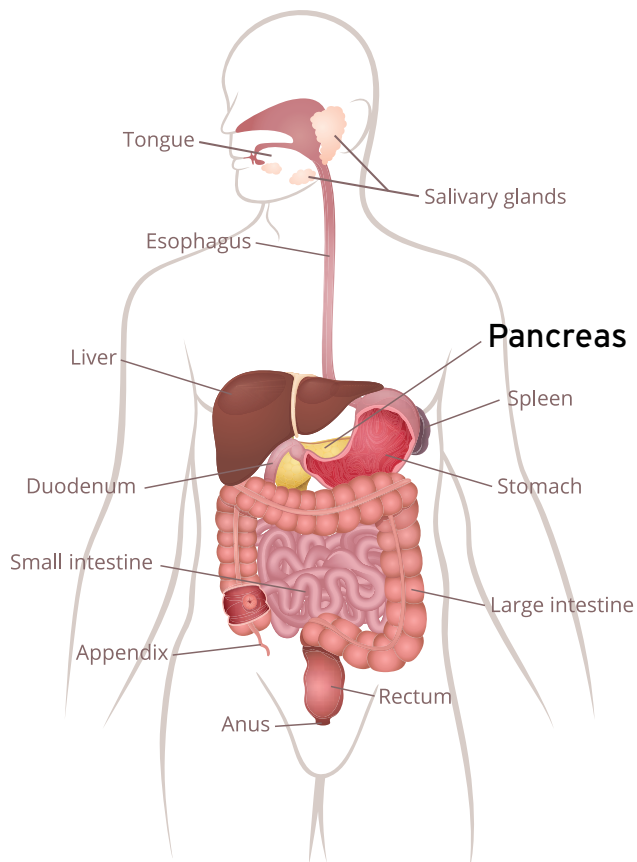
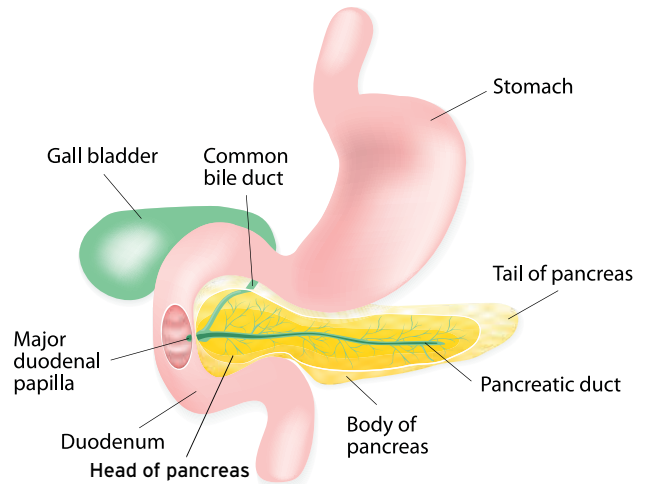
The pancreas is a gland about 6 inches long that is located deep in the abdomen, between the stomach and the spine.

The liver, intestines, and other organs surround the pancreas, making it hard to view on normal tests or scans.

The pancreas has two main functions – producing hormones and insulin. Insulin is the most important.

These hormones enter the bloodstream and travel throughout the body. They help the body use or store the energy that comes from food. Insulin helps regulate blood sugar levels.

The pancreas also makes pancreatic juices. The juices contain enzymes that help break down and absorb food, especially fats and vitamins. The enzymes may need to be replaced if you have surgery involving the pancreas. This may be temporary or permanent.



Pancreatic Cancer

Pancreatic cancer begins in cells that make up the tissues of the pancreas. In normal body tissues, cells grow and divide, forming new cells to replace old or damaged cells. This is the body's natural cycle — to get rid of old cells as new ones are made.

Sometimes genetic or environmental issues can cause cells not to die — leaving them to grow uncontrollably. These extra cells may form masses of tissues called tumors. You may hear medical staff refer to a tumor as a mass, lesion, neoplasm, nodule, or spot. These all have the same meaning.

Tumors in the pancreas can be benign (not cancer), premalignant, or malignant (cancer). Benign tumors are not as harmful as malignant tumors.

Benign tumors, such as cysts:

- Are usually not life threatening.
- Can be removed and usually don't grow back.
- Don't invade the tissues around them.
- Don't spread to other parts of the body.

IPMNs (intraductal papillary mucinous neoplasms):

- Produce thick fluid by the tumor cell (mucin).
- Sometimes can progress to cancerous tumors if left untreated.

- Can be referred to as side branch or main pancreatic duct cystic tumor.
- Has the highest risk of becoming cancer when in the main pancreatic duct.

Malignant tumors:

- Sometimes can be removed but can grow back.
- Can invade and cause damage to nearby tissues and organs.
- Can spread to other parts of the body — called metastasis.
- May be a threat to life.

Cancer can:

- **Invasive** — a cancerous tumor in the pancreas can invade organs nearby such as the stomach or small intestine.
- **Shed** — cancer cells can break off from the tumor in the pancreas and shed into the abdomen. This can lead to other tumors on the surfaces of organs in the abdomen.
- **Spread** — pancreatic cancer cells can spread by breaking away from the tumor and traveling through the blood vessels to the liver, lungs, or other organs. The cells can also spread through lymph vessels to nearby lymph nodes. After spreading, the cells may form new tumors and damage other tissues.

Symptoms

Symptoms do not usually occur in the early stages of pancreatic cancer. As the cancer grows, symptoms may include:

- Pain in the middle, upper back that may travel to the front in the abdomen.
- Dark urine.
- Pale or light-colored stools.
- Yellow skin and eyes (jaundice), often with itching.
- Nausea and vomiting.
- Weakness or feeling very tired.
- Loss of appetite or feeling of fullness.
- Weight loss for no known reason.

Diagnosis

Many pancreatic cancers are found accidentally during a CT scan done for another reason. However, patients can present with symptoms that need more testing. The following tests or exams may be performed.

Physical Exam

Your doctor will check your skin and eyes for signs of jaundice. Your abdomen will be checked for changes in the areas near your pancreas, liver, gallbladder, and spleen, and for abnormal buildup of fluid called ascites.

This exam will help determine the next phase of testing.

Lab Tests

Blood will be obtained to check for bilirubin and other substances. The blood will also be checked for tumor markers, which are substances found in the blood when you have cancer. The most common are the CA19-9 and the CEA. Not all patients have abnormal levels of these markers, but when they are abnormal, the markers are used to evaluate the response to treatment.

CT Scan (Computed Tomography)

A CT scan uses a computer linked to an X-ray machine that takes detailed pictures of the pancreas and other organs and blood vessels in the abdomen. You may receive an injection of contrast material to increase the information we can get from the study. The CT scan may show an abnormal area in the pancreas or elsewhere, but it is hard to know the extent of the tumor with a CT scan alone.

Endoscopic Ultrasound (EUS)

A gastroenterologist passes a thin lighted tube (endoscope) through the mouth, down the throat, and into the stomach, near the pancreas and the first part of the small intestine. The endoscope has an ultrasound probe to obtain images. These can show the size and location of a tumor in the pancreas and if it has spread to nearby structures.

Biopsy

A biopsy is a procedure in which tissue is removed for microscopic examination. Most often, a gastroenterologist will take a biopsy while doing an endoscopic ultrasound. This tissue is sent to the pathologist, a doctor who looks at the cells under a microscope in order to obtain a diagnosis. This is needed to begin a treatment plan.

ERCP (Endoscopic Retrograde Cholangiopancreatography)

A gastroenterologist passes an endoscope through the mouth, down the throat, and into the stomach and the first part of the small intestine. A smaller tube (catheter) is inserted through the endoscope into the bile ducts and pancreatic ducts. Contrast material is injected through the catheter, and an X-ray is taken. The X-ray can show any narrowed or blocked ducts, which may be the result of a tumor. If needed, the GI doctor can place a stent to relieve the obstruction of bile flow, which causes jaundice.

MRI (Magnetic Resonance Imaging)

A large machine with a strong magnet linked to a computer is used to make detailed pictures of areas inside your body. You will hear loud banging noises during an MRI. You will have to remain very still during this test. Please tell your doctor if you think this will be difficult or if you are claustrophobic.

PET (Positron Emission Tomography) Scan

A PET scan is a type of test that may or may not be needed. You receive an injection of radioactive sugar that gives off signals that the PET scan picks up. Cancer cells show up brighter because they take up the sugar faster than normal cells do. It can help show cancer that has spread to other parts of the body. Not all tumors take up the sugars injected, so not all tumors will show up on PET scans.

Staging

A staging system is a standardized way in which the cancer care team describes the extent that a cancer has spread. The main system used to describe the stages of cancers of the pancreas is the TNM system. It contains three key pieces of information:

- **T** describes the size of the primary tumor(s), measured in centimeters (cm), and whether the cancer has spread within the pancreas or to nearby organs.
- **N** describes the spread to nearby lymph nodes.
- **M** indicates whether the cancer has metastasized (spread) to other organs of the body. The most common sites of pancreatic cancer spread are the liver, the lungs, and the peritoneum — the space around the digestive organs.

Staging information can seem very confusing, but your doctor and nurse navigator will help you understand your staging once your surgery and pathology are complete. This will help with planning for future treatment options.

Other Factors

Other factors are also important in determining prognosis (outlook). The grade of the cancer — how abnormal the cells look under the microscope — is sometimes noted to be low, intermediate, or high grade.

For patients who have surgery, another important factor is the extent of the resection — whether or not the entire tumor is removed. This is sometimes listed on a scale from 0 to 2.

- **R0** – where all visible and microscopic tumor tissue was removed.
- **R1** – when microscopic cancer cells are present at the resection margins.
- **R2** – where some visible tumor could not be removed.

Genetics

Genetic counseling and testing is a service available through our Genetic Counseling Program. Based on your diagnosis of pancreatic cancer, you may want to discuss the chance your cancer could be hereditary as well as your family's cancer risk with Licensed Cancer Genetic Counselor (LGC).

These personal and family history features make it more likely that a discussion with an LGC would be helpful:

- You are Ashkenazi Jewish.
- You have had pancreatic cancer as well as another cancer such as breast, ovarian, endometrial, melanoma, thyroid, sarcoma, colorectal, small bowel, gastric, or kidney.
- Your family history includes any first-degree relative (parent, sibling, child) diagnosed with:
 - Breast, colon, or endometrial cancer before the age of 50
 - Male breast cancer
 - Ovarian cancer
 - Any known genetic mutation
- You have two or more relatives with any combination of these cancers: breast, ovarian, prostate, pancreatic, male breast, melanoma, uterine, thyroid, sarcoma, colorectal, small bowel, gastric, or kidney.

Please feel free to call our Mount Carmel Genetic Counseling Program with any questions or for more information: 614-234-6848.

Treatment

In most cases the aim of treatment is to control tumor growth and relieve symptoms. Only when pancreatic cancer is found very early is a cure a possibility. Methods of treatment may include radiation therapy, chemotherapy, and surgery.

Radiation Therapy

Radiation therapy is a cancer treatment that uses beams of high-energy X-rays to kill cancer cells.

How and Why it's Given:

- Daily, 5 days a week, for several weeks.
- Alone or with chemotherapy.
- Before surgery to help reduce the size of the tumor to make removal easier.
- After surgery to help prevent the cancer from coming back.
- When surgery is not an option, to slow the growth or to help with pain.

Radiation Facts:

- Radiation treatment does not cause pain.
- Side effects are limited to the area that is being treated.
- Side effects can build up over time and continue to last for a few weeks after treatment.
- Most common side effects are fatigue, decreased appetite, nausea, and diarrhea. Talk with your doctor about medications that may help.

Chemotherapy

Chemotherapy is the use of medication to destroy cancer cells. It is often given through an IV (intravenous) or by mouth. Because the drugs go throughout the body, they are useful for cancer that has spread beyond the place where it started.

Chemotherapy may be used at any stage of pancreatic cancer. It can be used before surgery along with radiation to shrink the tumor ahead of time. It may be used after the cancer has been removed in surgery to try to destroy any cancer cells still in the body. It can also be used for people with advanced cancer.

The most common chemotherapy medications used are:

- Gemcitabine (Gemzar®)
- Cisplatin (Platinol-AQ®)
- 5-FU (Fluorouracil, Adrucil®)
- Oxaliplatin (Eloxatin®)
- Erlotinib (Tarceva®)
- Capecitabine (Xeloda®)
- Abraxane®
- Immunotherapy

These may be used in combination with each other, in combination with radiation therapy, or alone.

Chemotherapy can cause side effects, which may include nausea, loss of appetite, mouth sores, diarrhea, or hair loss. Medication is given to prevent nausea, and the nurse will guide you on ways to deal with other side effects.

Clinical Research Trials

Due to the limited resources and treatments available for pancreatic cancer, your doctor may talk to you about a clinical trial that is right for you and your situation.

Clinical trials are research studies. They look at new treatments or changes in current treatments. All of the cancer treatments that we use today are the result of clinical trials.

Many Mount Carmel doctors are licensed as researchers with the National Cancer Institute (NCI). They take part in nationally sponsored cancer treatment clinical trials.

A local review board called an IRB (institutional review board) approves each clinical trial. The board is made up of doctors, nurses, and people from the community. It is the IRB's job to review clinical trials and to make sure they are run safely and fairly.

Men and women of all ages and backgrounds may take part in clinical trials. Each trial has rules about who can and cannot participate. If you are considering a clinical trial, your doctor will ask a research nurse to evaluate if you are a candidate.

At that time you will be able to read a consent form that explains how the entire clinical trial will go and what is expected of you. You will have the chance to ask questions and decide if this is right for you.

You always have the option to remove yourself from a clinical trial at any time and explore other treatment options.

Resources

Your Mount Carmel care team is here to help you throughout your care. You or your family may also find these websites helpful:

- **American Cancer Society:**
cancer.org
- **National Cancer Institute:**
cancer.gov
- **Pancreatic Cancer Action Network:**
pancan.org



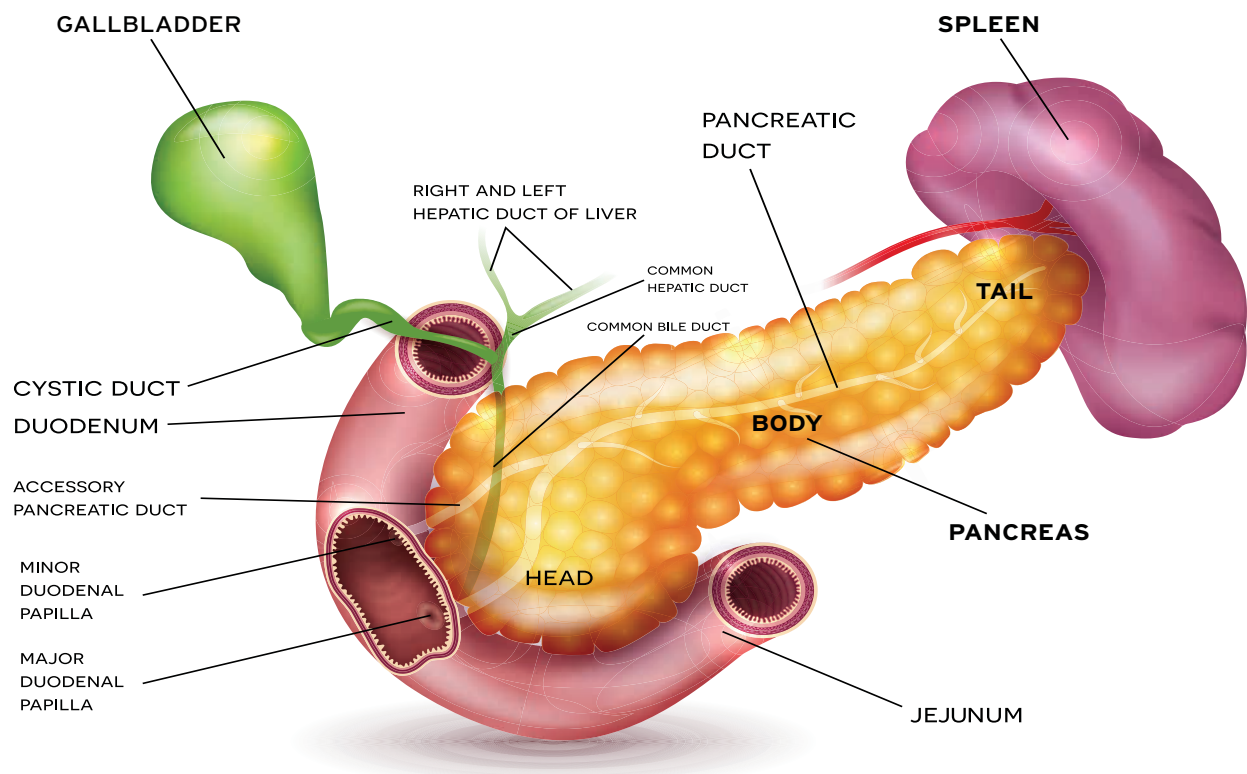
Surgery Care

Types of Surgery

Surgery for pancreatic cancer is a major operation. It may be an option for people with an early stage of pancreatic cancer. Surgery is the only treatment option that may cure pancreatic cancer. The type of surgery depends upon the location of the tumor.

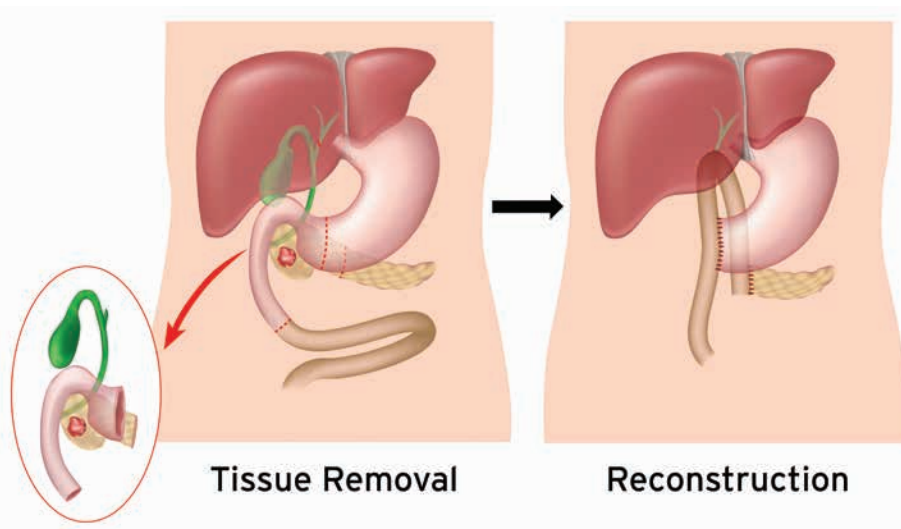
Distal Pancreatectomy

This operation is used more often with islet cell tumors found in the tail and body of the pancreas. The surgeon removes the tail of the pancreas or the tail and a portion of the body of the pancreas. This is often done laparoscopically. The spleen is usually removed as well. You will need a special vaccine to help your immune system compensate for the lack of a spleen.



Whipple Procedure

The Whipple procedure is done to remove a tumor in the head of the pancreas. The surgeon removes part of the pancreas, as well as part of the bile duct, small intestine, and nearby lymph nodes. The gallbladder and part of the common bile duct are removed, and the remaining bile duct is attached to the small intestine so that bile from the liver can continue to enter the small intestine. The pancreas neck is then connected to the bowel.



Preparing for Your Surgery

Because your cancer is unique, your surgeon will personalize your surgical care. You need to be as prepared as you can be physically, mentally, and nutritionally.

Physical Preparation

- The more active you are before surgery, the better your organs will tolerate surgery and the easier your recovery will be. Walking, riding a bike, climbing stairs, and other similar activities are all helpful. Your surgeon may ask you to record your activity to help monitor your progress.

- Another important way to prepare for surgery is to stop smoking and drinking alcohol.
- Work with your doctors to manage high blood pressure and blood glucose levels.

Motivation

- These surgeries are a challenge mentally as well as physically. It is helpful to engage your friends and family so that they can help motivate and support you during more difficult times.
- You may need family helping with your activity at home or in the hospital after surgery, offering encouragement, or praying together. Tell your family and friends what support you need.

Adequate Nutrition

- If you have been losing weight, your treatment team may decide you need at least 1 to 2 weeks of nutritional support before having surgery. This will help to decrease the risk of complications.
- Your surgeon will encourage you to drink a special nutritional supplement 5 days before surgery. This will be available in the office.
- A dietitian can help with your nutritional needs both before and after surgery.

What to Expect after Surgery

You will be in the Surgical Intensive Care Unit (SICU) at least a day or two after surgery.

You may be helped up to a chair the night of surgery and out of bed several times a day starting the next day.

This is an important part of recovery and helps to avoid complications such as lung congestion and blood clots in the legs.

You may be allowed ice chips but nothing else to eat and drink.

You may also have:

- A nasogastric tube in your nose, which is attached to wall suction to drain fluid from your stomach.
- Other drains, which may be attached to a bulb suction device.
- A feeding tube that may be placed

during surgery, to give liquid nutrition into your small intestine (jejunum).

- A G tube into the stomach, which may stay in for a few weeks after surgery.
- A Foley catheter in your bladder to drain urine, which will be measured.
- Pumps called SCDs (sequential compression devices) on your feet or calves that inflate and deflate to help prevent blood clots from forming.
- A device clipped on your finger called a pulse oximeter to measure your oxygen levels.

Managing Your Pain

After surgery, some pain is to be expected while you are recovering. Pain after surgery signals you to be careful and avoid problems during your recovery. You and your healthcare team will work together to manage your pain. There are things that you can do to aid in your recovery and pain management:

- Breathing exercises as instructed, using your incentive spirometer while splinting the surgical site with a blanket or pillow.
- Walking in the hallway as soon as the day after surgery.
- Sharing your pain level with your care team.

You will likely have a PCA (patient-controlled analgesia), which is a device that allows the patient to be in control of the pain medication. When you have pain, you push a button and a certain amount of pain medicine goes into the vein through the IV (intravenous) tubing. You should feel relief shortly after the button is pushed.

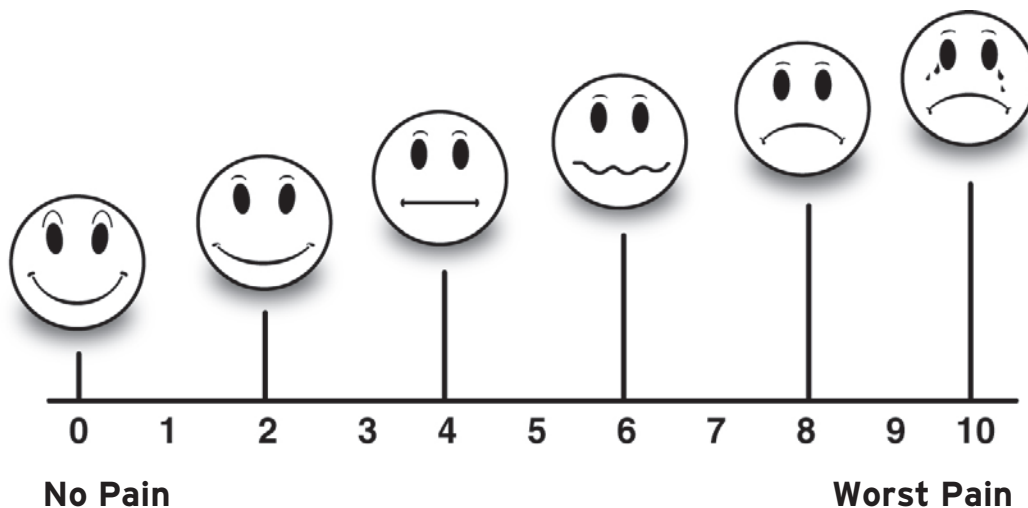
You can safely push the button as often as you need to — the PCA will give the medicine but will not give more than the doctor has ordered. The pump is programmed to give a safe amount of pain medicine over a set period of time. Only the patient is allowed to push the button.

Sometimes pain medicine can cause nausea, itching, confusion, or constipation. Tell your nurse if any of these side effects occur or you have any other concerns.

To help manage your pain:

- Take slow, deep, even breaths.
- Change your position.
- Ask to have the temperature or lighting in your room adjusted as needed for your comfort.
- Take your mind off the pain by listening to music, watching TV, reading, or visiting with family and friends.
- Think about being in a place that you find peaceful. Picture that place in your mind as you close your eyes.

You will be asked to rate your pain. This will help us know how your medication and other comfort measures are helping. You can use a number or choose a face on this scale that best rates your pain.



Other Procedures

Stent

Bilirubin passes from the liver through the gallbladder to the intestine. If the common bile duct is blocked by a tumor, the bilirubin cannot pass through normally. Pain and digestive problems can occur. Blockages may also cause the level of bilirubin in the blood, stool, or urine to be very high (yellow jaundice). A blockage can be treated with surgery or stent placement.

A stent (small tube) may be placed during an endoscopy. The endoscope is passed through the mouth and stomach into the small intestine.

The stent can then be inserted into the bile duct. Sometimes the stent becomes clogged after several months and needs to be cleared. Larger stents can be placed in the small intestine if it is in danger of being blocked.

If the stent cannot be placed, you may go to interventional radiology, where they will place an external drain called a biliary drainage tube.

Celiac Axis Block (CAB)

Sometimes pancreatic cancer involves nerves, causing severe chronic pain. This procedure can be done in surgery or interventional radiology and may be effective in pain relief.



Discharge from the Hospital

Your healthcare team — made up of your surgeon, nurse, social worker, dietitian, and physical therapist — along with you and your family will discuss what is best for your needs at the time of discharge. While some patients are able to go home directly, often with home care services, others may need a stay in long-term or rehab care.

What to Expect after Going Home

Your care after going home will involve many things. You will be taking new medications, caring for your drains and incision, and doing tube feedings.

After you are able to eat, you will need to take care with your diet. You and your family will be taught about your care before you leave the hospital.

Because there is a lot to learn, you should refer to this guide as often as needed.

Pancreatic Enzymes

Since you have had or may be having surgery on your pancreas, it is important to understand how the pancreas works to help in the digestion of food. Your pancreas creates about 8 cups of pancreatic juice a day, and this juice contains pancreatic enzymes. These are released into the small intestine and stomach to help neutralize stomach acid, which helps your body break down food.

When your pancreas is not working at its best, you may have a feeling of fullness, indigestion, cramping, gas, pain, diarrhea, and weight loss. Replacing the lost enzymes helps manage these side effects. Taking pancreatic enzymes may not relieve all of these symptoms but may make them tolerable.

There are many types of pancreatic enzymes on the market. They change often, so you may have to check with your pharmacy to see which one is available to you. The most common enzymes prescribed are Creon[®], Pancreaze[®], and Zenpep[®] capsules. Your doctor will prescribe the dose that you should start taking. You, your doctor, and your dietitian may have to adjust the dose many times before you find the right amount of enzyme to help with your symptoms. Please follow your doctor's advice for use.

Caring for Your Drains

You may have any one or several of these drains:

- Bulb/JP – Jackson-Pratt® drain
- Biliary drain
- G tube

Drains help promote healing and reduce the chance of infection at your wound site. The drain lets fluid out of the wound area. A dressing is used around the drain to absorb the drainage and to keep the site clean and dry. It also protects the drain and wound site. Discuss with your surgeon the reason for and care of your drain.

Changing the Dressing around a Drain

Change your dressing at least once a day or if there is leakage around the drain. If the dressing gets wet or comes loose, change it right away.

When you change the dressing, check how your wound is healing. Look for the signs of infection listed below. Call your doctor or home care nurse right away if you see any of these signs:

- Increased swelling
- Increased redness
- Foul odor
- Yellow or green drainage
- Increase in the amount of drainage in or around the drain
- The drainage changes from a clear fluid to bloody

Gather Your Supplies

- Antibacterial soap and water
- Washcloth and small towel
- Gauze 4 x 4-inch dressings
- Split gauze 4 x 4-inch dressings (optional)
- Cotton-tipped swabs — for cleaning around the drain
- Paper tape
- Nonsterile gloves

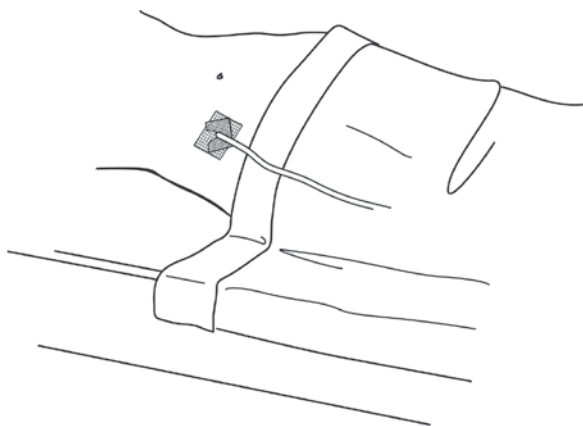
Follow These Steps

You do not need to wear gloves if you are changing your own dressing. If a family member or other support person is changing your dressing, he or she should wear nonsterile gloves. This protects the person from your body fluids.

1. Wash your hands with antibacterial soap and warm water. Put gloves on, if needed.
2. Remove the old dressing by peeling each piece of tape loose. Take the old gauze dressings off one layer at a time.
 - Be careful not to pull on the drain tube.
 - Note the amount and color of drainage on the dressing.
3. Throw the old dressing in the plastic bag. Remove soiled gloves and throw them in the plastic bag.
4. Look at the wound and drain sites for these signs of infection:
 - Swelling
 - Redness
 - Yellow or green drainage
 - Foul odor

5. Wash your hands again with soap and warm water.
6. Cut pieces of paper tape and have them within reach for attaching the dressing. Put on a new pair of gloves, if using gloves.
7. Cleanse the wound with soap and water:
 - Gently wipe down one side of the incision from the top of the wound to the bottom in one motion.
 - Use another washcloth to clean the other side of the incision.
 - Be sure to cleanse around the drain tubing carefully so it is not pulled.
 - Pat the incision line dry with towel from top to bottom.
8. Open the gauze dressing packages. Pick up the new gauze dressing carefully so you do not touch the side that will go on the wound.
9. Apply new gauze dressing to drain site.

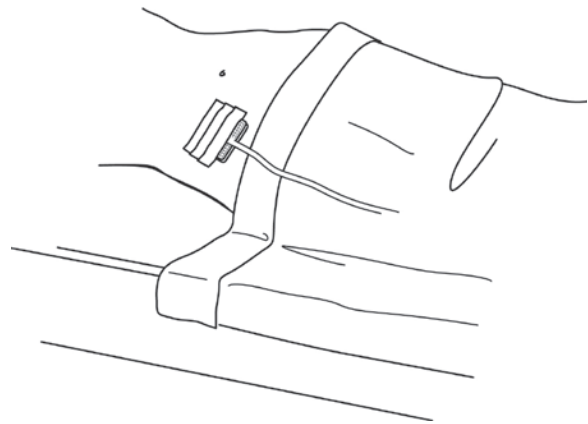
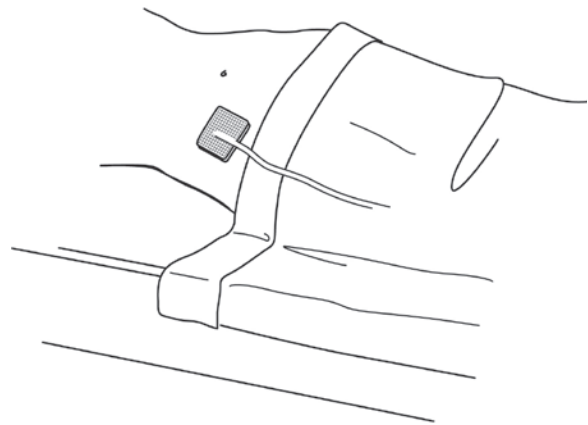
If you are using split 4 x 4-inch dressing:



- Place one split dressing around the drain tube.

- Place a second split dressing around the drain from the other direction so that the dressings overlap and surround the drain.
- Apply plain 4 x 4-inch dressings over the drain site.
- Tape the dressing in place by lapping each piece over to make a tight seal over the gauze.

If you are using plain gauze 4 x 4-inch dressings:



- Place one or more dressings under the drain.
- Put another 4 x 4-inch dressing on the top of the drain exit site.
- Tape the dressing to create a tight seal.

- Put all of the waste paper and used supplies, including gloves, in the plastic bag and tie it shut. Throw it away in your garbage can.
- Wash your hands again with soap and warm water.

Keep a dressing on your wound as long as you have any drainage on the dressing.

Bulb Drain

A bulb drain (also called a JP or Jackson-Pratt® drain) has a bulb that attaches to the end of the tube. The fluid from the wound comes through the tube and collects in the bulb. The bulb needs to be opened and emptied every few hours or as directed by your doctor. Your dressing may only need to be changed daily with this type of drain.

Emptying the Bulb Drain

Use a small medicine or measuring cup to measure the fluid each time you empty the bulb.

Keep a record of the amount of fluid you collect from your drain in a 24-hour period.

If you are emptying this more than once a day, you need to add up each time you empty it.

Once you empty the bulb, squeeze it to remove the air from the bulb, and replace the cap while holding the bulb. This causes a suction to be formed in the drain to pull more fluid out. If there is a piece of clot hanging



from the drain, it is safe to gently pull it out. This will not harm anything.

As the drain gets filled up, it will begin to expand. It should stay as flat as possible if there is no drainage in the bulb.

Drain Record

You will be emptying your drains and recording the amounts on a drain record. Drain as often as needed and record the amount of drainage each time on the drain record. Take it to each appointment with your surgeon.

Drainage and Biliary Tube Care

If you have questions or if problems occur, call your surgeon or interventional radiology at the hospital where you had the tube placed (see the right column for the telephone numbers).

Drainage Tube

A drainage tube is inserted into an abscess or site where fluid or infection has collected and needs to be drained.

Biliary Drainage Tube

A biliary tube is inserted when your liver is blocked. This allows bile to drain into a drainage bag.

General Care

- After the tube is inserted, some blood is normal, but you should not see blood in the drainage after 24 hours.
- Keep the drainage bag lower than where the tube was inserted.
- Avoid tension or pulling on the tube.
- Go about your daily routine unless your doctor has told you otherwise.
- Empty the drainage bag when it is about half full.
- Follow the instructions you were given about caring for your dressing and fixation device.
- Do not take a tub bath while the tube is in place. Ask your nurse if it is safe for you to shower.

Call Interventional Radiology (see numbers below) if:

- The tube stops draining.
- There is blood in the tube for more than 24 hours after the tube has been in place.
- The tube is pulled part or all of the way out.
- You have a fever or chills.
- Fluid is leaking around the tube.
- The fixation device dressing is soaked with drainage or is falling off.
- You have any questions about your tube.

Interventional Radiology

Monday through Friday,
8 a.m.–4 p.m., call:

Mount Carmel East
614-234-6518

Mount Carmel St. Ann's
380-898-4411

Mount Carmel West
614-234-5374

After 4 p.m. and on weekends, call the Radiology Department and ask to speak to the technologist on call:

Mount Carmel East
614-234-6770

Mount Carmel St. Ann's
380-898-4020

Mount Carmel West
614-234-5100

Irrigating a Biliary Tube

The tube you have in your side may need to be irrigated to keep it open so it will drain. Irrigate the tube once a day or as ordered by your doctor.

Equipment You Will Need

- Alcohol swabs
- 10-cc syringe
- 10- to 20-cc sterile saline or 10-cc prefilled saline syringes
- 19-gauge needle if not using prefilled syringes
- Gauze pads

Follow These Steps

1. Wash your work surface with soap and water.
2. Wash your hands well with soap and warm water. (If you have prefilled syringes, go on to step #8.)
3. Remove the cap from the sterile saline. Wipe the top of the bottle with an alcohol swab.
4. Attach the needle to the 10-cc syringe. Pull the plunger back to the 10-cc mark.
5. Insert the needle into the bottle of sterile saline. Inject air into the bottle.
6. Tilt the bottle upside down and pull back the syringe plunger. Saline will flow into the syringe. Fill the syringe to the 10-cc mark, and then tap it lightly with your fingers to push any air to the top. Push any air from the syringe back into the bottle. Repeat the process until it is at the 10-cc mark.

7. Re-cap the needle on the syringe and set the syringe aside.
8. Open a package of gauze, being careful not to touch the gauze.
9. Taking care not to touch the ends of the tube, disconnect the connecting tube from the catheter.
10. Wrap the end of the connecting tube in the gauze.
11. Remove the needle from the syringe of sterile saline. Insert the syringe into the end of the catheter.
12. Inject the saline into the tube in a steady motion.
13. Remove the syringe from the catheter.
14. Clean the end of the connecting tube with an alcohol swab and reconnect the tube to the catheter. Fluid should drain through the tube into the collecting bag.

Call Interventional Radiology (see telephone numbers on page 20) if:

- There is no drainage from the tube for 12 hours.
- Drainage is showing around the tube.
- You cannot push in the saline or you meet resistance when irrigating the tube (first check that the catheter is in the “on” position).
- You have any questions about the tube or about irrigating the tube.

Caring for Your Incision

You may have staples that will be removed on your first follow-up visit to your surgeon.

If you have Steri-Strips (thin little pieces of tape), keep these clean and dry until they fall off or begin to peel at the edges. Once they are peeling, you can remove them as long as it is more than 7 days after surgery.

Do not put powder or lotion on your incision. Wash gently and pat dry.



Nourishment

Your diet will be guided by your surgeon and dietitian after surgery. In general you should avoid carbonated drinks, spicy foods, and high-sugar and fatty foods, as they cause your pancreas to work harder while digesting. Take your time and chew your food well before swallowing. Gradually you will be transitioned to a normal diet.

If you go home with tube feedings, don't forget to keep records of all calories you take in by mouth and bring this to your surgeon, as it will help us guide the transition back to your normal diet faster and safer.

Feeding Tubes

A feeding tube provides a way for you to get liquid food into your stomach or small intestine to give your body the nutrients it needs.

Your doctor and dietitian will determine which type and how much feeding to give you to meet your nutrient and calorie needs.

You will also need to take in more water each day by drinking or by putting it in through your feeding tube, unless your doctor wants you to limit fluids.

Feeding tubes are named by the place at which they enter the body and where the tip of the tube lies.

- **Jejunostomy or J tube.** This tube goes through the skin of the abdomen and into the small intestine. The tip of the tube rests in the part of the small intestine called the jejunum.
- **Gastrostomy, PEG, or G tube.** This tube goes through the skin of the abdomen and into the stomach. The tip rests in the stomach.
- **Gastrostomy-jejunal tube.** This combination tube works as two tubes in one. It is put in through the skin of the abdomen. One tube tip rests in the stomach to drain fluid from the stomach. The second tube is threaded through the first tube and into the small intestine. The tip of the second tube rests in the middle part of the small intestine called the jejunum. This tube is used for feeding.
- **Nasogastric or NG tube.** This tube goes through the nose and esophagus. The tip of the tube rests in the stomach.

Daily Care of the Feeding Tube after Day 3

- Use a clean washcloth to clean the skin around the tube with soap and warm water. Rinse with clean water and dry well.
- Let the skin around the tube be open to the air without a dressing.
- Secure the tube to the skin with tape. This will keep the tube from being pulled out at the skin site.

If you are using a special separate tube holder device, clean the tube site daily as follows:

- Use cotton-tipped swabs dipped in warm water to gently clean the tube site. If there is any crust or drainage present, you may need to use several swabs to moisten and gently remove it all.
- Use a dry cotton-tipped swab applicator to dry the tube site.

Note: If you have drainage around the tube due to excess drainage, change this dressing as soon as it feels wet to your skin. You do not want a wet dressing against your skin for very long, because it could cause damage to your skin.

Tube Feeding

Tube feeding is used most often after surgery to add to your calorie and nutrient intake — not just to replace food you are unable to eat. If the doctor has given you specific

diet orders, you may also follow those in addition to the tube feeding. Remember that you may feel full faster if you eat close to the time your tube feeding was given.

Changing from eating meals to being fed through a tube can be stressful for you and your family. Family members can help and support you. Some people prefer to take the tube feeding in private. Others prefer to take their tube feeding with the rest of the family at mealtime so they can talk and share one another's company. You can choose a time that works within your own schedule.

There are several ways that tube feedings can be given:

- Syringe or bolus feeding — only for G tubes (gastric)
- Gravity drip feeding
- Pump feeding

The method that you will be using has been chosen to best meet your needs.

Body Position

For all types of feeding, the feeding should be given while you are sitting up in a chair or raised up in bed on several pillows.

- Stay in a raised position for 30 to 60 minutes after the feeding.
- Do not lie flat. If you lie flat too soon after the feeding, it may cause nausea and vomiting.

Syringe or Bolus Tube Feeding

With this type of feeding, the syringe is used like a funnel. The formula is poured into the syringe and goes down the tube.

- The higher the syringe is held, the faster the feeding tube will empty.
- The feeding should take about 10 to 15 minutes.
- If the formula is going in too fast, hold the syringe funnel lower.

Getting Ready

1. Wash your hands well.
2. Gather your supplies:
 - 50- or 60-mL syringe with plunger removed to use as a funnel
 - Formula
 - Measuring container
 - Tap water to clear the tube before and after the formula
3. Wash off the top of the formula can with hot water.
4. Shake the can of formula to mix it.
5. Open the can and pour the amount to be given into a measuring container or directly into the syringe funnel.
6. Make sure to sit up during the feeding or be raised up on several pillows. You will need to stay in a raised position for 30 to 60 minutes after the feeding.

Giving the Feeding

1. Remove the cap from the feeding tube. Put the tip of the syringe funnel into the feeding tube.
2. With the syringe funnel held upright, pour water into the syringe.
3. Unclamp the feeding tube clamp.
4. While the water goes down in the syringe, add the formula before it empties. This prevents air from entering the stomach.
5. When the formula has been given, clamp the tube again.
6. Pour the amount of tap water to be given through the funnel.
7. Open the clamp and let the water go through the tube.
8. Re-clamp the tube and remove the syringe.
9. Re-cap the feeding tube.

Cleaning Up

1. Wash the syringe, plunger, and measuring container in hot, soapy water. Rinse well and dry.
2. Store the syringe and measuring container in a clean, covered container. A covered plastic box or a resealable plastic bag works well. Replace the syringe every 24 hours or as directed.
3. Store unopened cans of formula at room temperature. Store an opened can in the refrigerator for up to 24 hours — then throw it away.

Gravity Drip Feeding

This type of feeding is given using a feeding bag and tubing. Adjusting the roller clamp on the tubing controls the flow of the formula.

Getting Ready

1. Wash your hands well.
2. Gather your supplies:
 - Formula
 - Measuring container, if needed
 - Feeding set — bag and tubing
 - 50- or 60-mL piston syringe
 - Tap water
 - Pole or hook on the wall to hold feeding bag
3. Wash off the top of the formula can with hot water.
4. Shake the can to mix the formula.
5. Attach the tubing from the feeding set to the feeding bag. Close the roller clamp on the tubing.
6. Open the can and pour the amount of formula to be given into a measuring container or directly into the feeding bag.
7. Close the bag. Hang the bag on a pole or hook at least 3 feet above your stomach.

Giving the Feeding

1. Take the cap off the end of the tubing attached to the feeding bag.
2. Squeeze the drip chamber so that the formula fills the chamber about half full.
3. Open the flow regulator clamp and let the formula fill the tubing. This will clear the air out of the tubing.
4. Once the formula has filled the length of tubing, close the flow regulator clamp again.
5. Be sure to sit up during the feeding or be raised up on several pillows. You will need to stay in a raised position for 30 to 60 minutes after the feeding.
6. Remove the cap from the end of the feeding tube.
7. Attach the tubing from the feeding bag to the feeding tube.
8. Open the clamp on the feeding tube.
9. Roll open the flow regulator clamp to let the formula run into the tube. Adjust the clamp to have the formula run in for about 30 minutes.
10. Check the bag and tubing often to make sure that the flow keeps going. Adjust the clamp as needed.

When All of the Formula Has Run In

1. Close the clamp on the feeding tube.
2. Close the flow regulator clamp.
3. Disconnect the tubing from the feeding tube.
4. Using the piston syringe, draw up the amount of water that is to be given after the feeding.
5. Put the end of the syringe into the feeding tube. Open the clamp on the feeding tube and push the water through the tube.
6. Clamp the feeding tube again and remove the syringe from the feeding tube.
7. Put the cap back on the end of the feeding tube.
8. Wash the feeding bag, tubing, and syringe with hot, soapy water. Rinse well with water. You may need to let clear water run through the tubing to clear the soap residue.
9. Let the bag and tubing air dry. Store the supplies in a covered container. A plastic box with a lid or a resealable plastic bag works well.
10. Replace the feeding set and syringe every 24 hours, or as directed.
11. Store unopened cans of formula at room temperature. Store an opened can in the refrigerator for up to 24 hours — then throw it away.

Pump Feeding

For this type of feeding, the formula is placed in a bag with tubing attached.

- The tubing is run through a pump that will give the formula at a set rate.
- The tubing is attached to the feeding tube and then the pump is turned on to push the formula into the feeding tube.
- The bag and tubing usually need to be replaced each day, not reused.

Follow the directions from the manufacturer of the pump that you are using for:

- How the tubing is to be attached and put in the pump
- How to fill the tubing
- How to work the pump

General Guidelines

1. Wash your hands with soap and warm water.
2. Wash off the top of the formula can with hot water.
3. Shake the can to mix the formula.
4. Close the clamp on the tubing attached to the feeding bag.
5. Open the can and pour the formula into the feeding bag in the amount needed for no more than 8 hours of feeding.

6. Squeeze the drip chamber so that the formula fills the chamber about half full. For some pumps, you will need to squeeze a section of the tubing to push the formula through the tubing.
7. Open the clamp on the tubing and let the formula run through the tubing, clearing the air as it goes.
8. Put the tubing into the pump as directed in the manufacturer's instructions.
9. Attach the tubing to the feeding tube.
10. Open the clamps on the feeding tube and the tubing from the pump.
11. Turn the pump on and set the flow rate. Move the switch on the pump to begin the flow of the formula.
 - Check from time to time to be sure that the formula is flowing well.
 - Listen for the pump to beep or stop. This may happen if the tubing is blocked or if the feeding bag is empty.
12. Store unopened cans of formula at room temperature. Store an opened can in the refrigerator for up to 24 hours — then throw it away.

Giving Extra Water through the Tube

Extra water is often given every day to keep you from getting dehydrated. The extra water may also be needed to keep your feeding tube from clogging.

After each medication is given through the tube, flush tube with 30 mL of water. This will help the tube stay open and reduce the need for replacing the tube.

Use the plunger in the syringe when you are giving extra water after a feeding or after medicine is given through the tube.

Put the tip of the syringe into the water and pull back on the plunger so the water goes into the syringe. Put the syringe into the end of the feeding tube and push firmly and quickly to force the water through the tube.

You can remove the plunger from the syringe and put the syringe into the end of the tube. Use the syringe like a funnel and pour the water into it. The water will empty into the tube to your stomach or your small intestine.

Solving Problems

You may never have these problems, but you need to be aware of them and know what to do in case they occur.

Stomach Discomfort

This may be a feeling of nausea, belching, bloating, or fullness.

- If you are using the pump method, stop the feeding. Wait 2 hours and then start the feeding again.
- Never force a feeding. If you feel full, wait an hour or so before taking more.
- Body position can help to prevent these stomach problems. Keep your head raised at least 30 degrees while giving your feeding and for 30 to 60 minutes after your feeding is done. This is also a good time to walk.
- Your feeding plan may need to be adjusted if you keep having these problems. Call your doctor, nurse, or dietitian if the discomfort lasts longer than 4 hours.

Diarrhea

Talk to your doctor about what your bowel habits may be on the tube feeding. Some health conditions or medication can increase the risk of diarrhea.

A person on a tube feeding may have soft or loose stools. Loose, frequent, watery stools are known as diarrhea. Sometimes people also have cramping in the stomach with the loose stools.

If diarrhea is a problem, try these tips.

- Make sure your supplies are cleaned well after use.
- After talking with your doctor, nurse, or dietitian, give smaller and less concentrated feedings, at a slower rate, more often.

- Refrigerate leftover formula. Throw away opened formula that is not used within 24 hours.
- If you are not able to tolerate the amount of feeding on your feeding plan, call your doctor, nurse, or dietitian.

Diarrhea can drain your body of a lot of water.

- If diarrhea **lasts more than 24 to 48 hours**, call your doctor or nurse. You may need a stool sample sent to check for infection.
- You may need to put extra water through your feeding tube each day that you have diarrhea.

Dehydration

This occurs when your body tissues do not get enough water to meet their needs. It can happen when large amounts of water are lost through diarrhea. It also can be caused by some kinds of medication, such as diuretics.

Diuretics, which are also called water pills, cause your body to get rid of more fluid.

Your formula, plus the extra water used to flush your tube, should meet your fluid needs. If your fluid needs are not being met, you may have:

- A strong thirst
- Fever
- Weakness
- Less urine
- Dark-colored or strong-smelling urine

Dehydration can be a serious problem. Be sure to take in the amount of water your doctor or dietitian ordered for you each day.

- You may need to increase your daily water intake when:
 - The weather is hot and humid.
 - You are perspiring heavily.
 - You have diarrhea.
 - You are running a fever.
 - Your urine is dark in color.
- Talk to your doctor, nurse, or dietitian to find out how much extra water to take each day.
- Weigh yourself once a week. If you lose more than 5 pounds in a week, call your doctor or nurse.
- Call your doctor if you have a strong thirst and a dry mouth that do not go away.

Missed Feedings

At times you may miss a feeding or not be able to get in the planned amount for a day. This should not be a problem unless it occurs often, or if you have diabetes.

- If you are on a cycle feeding, you can extend your feeding time.
- Do not try to make up a missed feeding by doubling your next feeding or increasing the rate that your formula is running. Too much formula, in too short a time, can cause cramping and stomach upset.
- Check your blood sugar if you have diabetes.

Blocked Tube

If you find that the feeding will not go in or the flow is very slow, the feeding tube may be blocked.

- Check the length of the tubing to be sure there are no kinks. Also check that there are no clamps on the tubing that may be blocking the flow.
- Next, feel the length of the feeding tube to see if you can feel any bumps in the tube. Sometimes formula or medicine can clump together to block the tube.
 - Using two fingers, squeeze the tube between your fingers, and then release it to break up the clump inside the tube.
 - Start at one end and move along the length of the tube, squeezing and releasing as you go to see if the tube will open up.
- Do not use any tool or object to poke inside the tube or to squeeze the tube. This could result in damage to the tube that would mean the tube would have to be replaced.
- If you have tried to clear the tube without success, call your nurse or doctor.

Starting tube feedings can feel challenging, but once you have done it for a few days it will become easier. Talk with your doctor or nurse about any questions or concerns.

Nutrition by Mouth

Eating Guidelines

After surgery, you will slowly introduce foods to help avoid symptoms like nausea, diarrhea, and gas. This diet contains foods that are easy to digest and are low in fiber, fat, and added sugar.

- Keep food records for the calories you are eating by mouth and for your tube feeds (if you are still receiving them). This will help your surgeon and dietitian get you back to a normal diet more quickly and safely.
- It is important to eat often. Aim to eat 6 to 8 small meals and snacks daily. Keep meal size to 1 cup or less per meal.
- Take small bites or sips, eat slowly, and chew food well.
- Do not eat foods high in sugar. Check the ingredients for added sugar and avoid foods that have sugar listed in the first few ingredients. Names for sugar include sucrose, fructose, and high-fructose corn syrup. Do not eat a food that has more than 12 grams of sugar per serving.
- Eat nutritious foods that contain protein with all meals and snacks. Choose fat-free or 1% milk products, eggs, egg whites, and lean sources of meat such as chicken, turkey, and fish. Once you are allowed First Foods (see on page 35), make sure meats are tender. Limit red meat and processed meats such as beef,

packaged prepared meats, hot dogs, pre-made hamburgers, bologna, and salami.

- Choose healthier fats such as peanut butter, avocados, olive oil, and canola oil.
- Drink liquids a half hour before and a half hour after meals and snacks to avoid fullness.
- Plan to eat your largest meal when you feel the most hungry. We often think of dinner as being the biggest meal, but if you are hungrier earlier in the day, then make that meal your largest meal.
- Note how you feel after you eat. Abdominal discomfort, bloating, diarrhea, or gas may be signs you did not tolerate something you ate.

Blenderized Diet

You may need to follow a blenderized diet for up to 2 weeks unless your doctor has told you otherwise.

- Follow these blenderized diet guidelines to ensure that you have a healthful diet as you heal.
- Blended foods and liquids should have no pieces or parts of food in them.
- Do not have orange or other acidic fruit juices.
- Take a vitamin C supplement if instructed.
- Talk with your dietitian about any questions or concerns.

Blenderized Foods

<p>Drinks</p>	<p>Water Decaffeinated tea or coffee Fruit juice (must be diluted by adding half water) Sugar-free drinks (Crystal Light®) Sports drinks (Regular sport drinks must be diluted by adding half water; or you may drink full-strength Gatorade® G2 and other brands containing low sugar.) No carbonated drinks Low-sugar protein drinks: Glucerna® Boost® Glucose Control Boost® Optimum Boost® High Protein Ensure® High Protein Premier Protein® Shake Carnation Breakfast Essentials® No Sugar Added</p>
<p>Milk</p>	<p>Fat-free or low-fat milk, low-fat buttermilk, or low-fat soymilk. Low-fat pureed cottage cheese thinned with low-fat or fat-free milk. Fat-free or low-fat yogurt (smooth with no fruit pieces) with no more than 12 grams of sugar per serving. (Use lactose-free products if you are lactose intolerant.)</p>
<p>Cereals</p>	<p>Cream of Wheat, hominy grits, Malt O'Meal®, strained oatmeal, Cream of Rice, and other cooked cereals made with refined grains Make and thin with low-fat milk or water.</p>
<p>Eggs</p>	<p>Pasteurized low-fat eggnog</p>
<p>Fat</p>	<p>Choose healthier fats such as peanut butter, olive oil, canola oil, peanut oil, and avocados.</p>
<p>Fruits & Vegetables</p>	<p>Fruit juice diluted by adding half water Pureed fruits Pureed vegetables diluted in soups Thin mashed potatoes diluted in cream soup.</p>

Soups	<p>Bouillon</p> <p>Strained, pureed vegetable soup</p> <p>Strained meat-based or cream soups containing pureed vegetables or pureed meats</p> <p>Healthy Choice® and Campbell's® 98% fat-free canned creamed soups made with low-fat milk</p> <p>Make your own soup by mixing broth with 1 jar of stage 1 strained baby meat, 1 jar of stage 1 strained baby carrots, and 4 Tbsp. mashed potatoes (use only for soup). Season this with garlic powder, onion powder, and bay leaf. Thin with broth.</p>
Desserts	<p>Diet custard or pudding made with fat-free or low-fat milk</p> <p>Gelatin (sugar-free)</p> <p>Popsicle (sugar-free)</p> <p>Ice cream (low-fat, low-sugar)</p>
Other	<p>Non-dairy creamer</p> <p>Low-sugar jam/jelly</p> <p>Fat-free sour cream</p> <p>Pepper</p> <p>Garlic powder</p> <p>Onion powder</p> <p>Fat-free mayonnaise</p> <p>Cinnamon</p> <p>Nutmeg</p>

Strained means using a mesh strainer to drain the liquid into a cup while the mesh strainer catches the larger food pieces that should not be eaten on a blenderized diet.

Watch for symptoms of lactose intolerance with milk, cottage cheese, and other dairy products. If you are lactose intolerant, try lactose-free milk products or take lactase enzyme supplement (Lactaid®) before eating dairy products.

Low-sugar foods and protein drinks are recommended in the first few weeks to avoid dumping syndrome. Dumping syndrome may occur 30 to 60 minutes after eating and causes food in the stomach to pass too quickly into the intestines. Foods that often trigger dumping syndrome are usually foods that contain high amounts of sugar.

Sample Menu

Use this sample menu as a guide. Have 2 to 3 packets of no-sugar-added Carnation Breakfast Essentials®, 2 to 3 bottles of Glucerna®, Boost® Optimum, Boost® Glucose Control, Boost® High Protein, Ensure® High Protein, Premier Protein®, or other low-sugar protein drinks per day. Be sure to have more milk and milk-based products and less gelatin and juice, because milk products contain protein.

Meal 1	1 cup Cream of Wheat thinned with fat-free or 1% milk mixed with smooth peanut butter
Meal 2	½ cup applesauce ½ cup low-fat Greek yogurt
Meal 3	½ to 1 cup Glucerna®
Meal 4	½ to 1 cup strained cream of chicken soup ½ cup sugar-free pudding made with low-fat milk
Meal 5	½ cup sugar-free gelatin ½ to 1 cup no-sugar-added Carnation Instant Breakfast® No Sugar Added mixed with fat-free or 1% milk
Meal 6	½ cup low-fat custard ½ to 1 cup of strained cream of potato soup
Meal 7	½ cup pureed peaches ½ cup pureed fat-free or 1% cottage cheese
Meal 8	½ to 1 cup Boost® Glucose Control ½ to 1 cup smashed banana

Aim to drink a total of 64 ounces or more of liquids per day. Drink liquids half an hour before and half an hour after each meal.

First Foods List (After Blenderized Diet)

Food Group	Recommended Foods in the First Few Weeks	Notes
Dairy	Fat-free or 1% milk products as tolerated Sugar-free pudding Low-fat yogurt Low-fat cheese Low-fat cottage cheese Low-fat, no-sugar-added ice cream	Fat-free is also called "skim." Low-fat is also called 1%. No whole-milk products.
Protein	Eggs, egg substitute, or egg whites Skinless chicken or turkey breast Beef, 90% or leaner Fish Tofu Creamy peanut butter	Poultry and other meats should be tender. Avoid heavy gravy and cream sauces.
Grains	White pasta White rice White bread, flour tortilla, English muffin, mini bagels Egg noodles Saltine crackers Graham crackers Animal crackers Cold unsweetened cereal (corn flakes, Rice Krispies) Cooked cereal (Cream of Wheat, grits, oatmeal)	Choose grains that contain less than 2 grams of fiber per serving. Avoid high-fat grains such as biscuits, croissants, and doughnuts. Avoid cereals with nuts, seeds, coconut, and other dried fruits.

Food Group	Recommended Foods in the First Few Weeks	Notes
Vegetables	Tender cooked vegetables (green beans, carrots, spinach, peeled potatoes)	<p>Avoid gassy foods such as broccoli, asparagus, Brussels sprouts, and cabbage.</p> <p>Avoid vegetables with large seeds such as tomatoes, zucchini, or cucumbers.</p> <p>No corn.</p> <p>No potatoes with skins.</p>
Fruits	<p>Bananas</p> <p>Canned fruit in natural juices (drained) such as peaches, pears, and other canned fruits without skins</p> <p>Applesauce</p>	<p>Avoid canned fruits that contain syrup, skins, seeds, and membranes.</p> <p>Avoid berries.</p> <p>Avoid dried fruits such as raisins, apricots, and prunes.</p>
Desserts	Sugar-free gelatin, sugar-free popsicles, sugar-free desserts	Avoid high-sugar desserts and desserts with nuts and berries.
Drinks	<p>Water</p> <p>Decaffeinated tea or coffee</p> <p>Fruit juice (must be diluted by adding half water)</p> <p>Sugar-free drinks (Crystal Light®)</p> <p>Sports drinks (Regular sport drinks must be diluted by adding half water; or you may drink full-strength Gatorade® G2 and other brands containing low sugar.)</p> <p>Low-sugar protein drinks</p>	<p>Drink liquids half an hour before and half an hour after snacks and meals to avoid fullness.</p> <p>Avoid sugar-containing drinks.</p> <p>No carbonated drinks.</p>

Food Group	Recommended Foods in the First Few Weeks	Notes
Protein Drinks	Low-sugar protein drinks: Glucerna® Boost® Optimum Boost® High Protein Ensure® High Protein Premier Protein® Shake Carnation Breakfast Essentials® No Sugar Added	Choose a supplement with no more than 12 grams of sugar per serving. Other low-sugar options are available in the pharmacy.
Protein Powder	Protein powder	Use 1 scoop that provides 10 to 20 grams of protein.
Smoothies	Make these low in sugar with allowed fruits (see above). Use low-fat milk, low-fat yogurt, or low-sugar protein drinks as the base of the smoothie for extra protein.	Store-bought or restaurant smoothies are very high in sugar. One 8-ounce serving should provide less than 45 grams of carbohydrates, 5 grams of fat or less, and 10 grams of protein or more.
Other	Salt, pepper, artificial sweeteners, low-calorie jelly, mild-flavored sauces, and other spices as tolerated	

First Foods Sample Menu

Breakfast	2 scrambled eggs with grated low-fat cheese 1 piece of white toast 1 Tbsp. smooth peanut butter 1 banana
Morning snack	½ to 1 cup Glucerna® Low-fat string cheese
Lunch	½ sandwich made with: 3 ounces sliced lean turkey, low-fat cheese, fat-free mayonnaise ½ cup soup
Afternoon Snack	½ cup peaches ½ cup low-fat cottage cheese
Dinner	3 ounces baked chicken ½ cup mashed potatoes ½ cup green beans
Evening Snack	½ to 1 cup Boost® Glucose Control 4 graham crackers 2 Tbsp. smooth peanut butter

Solving Problems

You may never have the following problems, but you need to be aware of them and know what to do in case they occur.

Diarrhea

Avoid these foods that may worsen diarrhea:

- Fatty, greasy, or fried foods including high-fat meats such as bologna, salami, sausage, hot dogs, bacon, tough meats, high-fat cheeses, whole or 2% milk, regular ice cream, rich desserts, sugar-coated cereals, doughnuts, and sweet rolls.
- Regular soft drinks, cake, pie, foods with added oils, butter, gravy, sour cream, cream cheese, salad dressings, and many fast foods.
- Foods that contain insoluble fiber such as whole grain bread, whole grain cereal, raw fruits with thick peels, raw vegetables, and nuts. These types of foods move faster through the intestines, which can make diarrhea worse.
- Gas-producing foods such as broccoli, cabbage, Brussels sprouts, onions, dried beans, corn, popcorn, carbonated drinks (including diet), and chewing gum.

- Foods high in sugar (including fruit juices) may cause dumping syndrome. Avoid foods with more than 12 grams of sugar per serving.
- Foods sweetened with sugar alcohols, which include sorbitol, mannitol, and xylitol. These are often found in sugar-free gum, sugar-free candy, and other sugar-free foods.

To Help Manage Diarrhea

- Drink plenty of fluids. Aim to drink 6 to 12 cups of fluids daily. Avoid liquids that contain caffeine, sugar, and carbonation.
- Plan to eat 6 to 8 small meals daily.
- Choose:
 - Low-fat foods.
 - Foods that contain soluble fiber such as oats.
 - Foods with pectin such as applesauce and bananas.
 - Warm broth, saltines, pretzels, baked potato chips, and low-sugar sports drinks to help replace lost sodium.
 - Diluted fruit juices, low-sugar sports beverages, potatoes, and bananas to help replace lost potassium.
- If you develop lactose intolerance, choose soy products or Lactaid® products. Lactaid® Fast Act tablets can be taken with dairy products. Almond, coconut, and other plant milks can be used but are very low in protein.

Delayed Gastric Emptying

Delayed gastric emptying is when the stomach empties too slowly after eating. Symptoms include nausea, vomiting of food that has not been digested, fullness, and abdominal pain.

Guidelines:

- Eat small, frequent meals.
- Chew your food well.
- Make sure you are eating low-fat, low-fiber foods from the First Foods list.
- Take a walk after eating to help food move through your system.

Progressing to a Regular Diet

After you have recovered and your doctor has recommended a regular diet, you should be able to slowly add your usual foods back into your diet.

- Add new foods back to your diet one at a time to make sure your body tolerates and can digest these foods correctly.
- If you have discomfort or any new symptoms, use a food diary to keep track of the foods you are eating and drinking. Be sure to record the types of foods and drinks, how much, and any symptoms you are having. Bring your food diary to your doctor appointments. Your doctor, nurse, and dietitian will be able to help identify foods and drinks that may be causing any symptoms.



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August 2018