

Better, Faster Recovery After Whipple Surgery

with the Enhanced Recovery After Surgery (ERAS) Program



STRONG
MEMORIAL HOSPITAL

What is Enhanced Recovery After Surgery (ERAS)?

Enhanced Recovery After Surgery (ERAS) is a program based on scientific evidence that encourages a healthy recovery after surgery. Our goal is to improve your surgical experience and help you get back to normal as soon as possible.

We do this by working together to manage your care before and after surgery. **You** are a very important part of the team.

This booklet will:

- Help you prepare for your surgery
- Explain how you play an active part in your recovery
- Give you daily goals to achieve

Research shows that you will recover faster if you do the things explained in this booklet. There are instructions about eating and drinking, physical activity, and controlling your pain. These tips will help you to feel better faster and safely go home sooner.

Please bring this booklet with you on the day of surgery. Use it as a guide during your hospital stay. We may refer to it as you recover and review it with you when you are ready to go home.

Having surgery can be stressful for you and your support network. The good news is that you are not alone. We will support you each step of the way. Please ask us if you have questions about your care. We want to be sure to answer all your questions!

Use this space to write down your questions as you go through the booklet. There is additional space at the end as well.

Questions for my surgical care team:

Your Surgical Care Team

You will see many different people from your care team during your hospital stay. We work together to check your condition and plan the best steps towards a healthy recovery.



Dr. Darren Carpizo
Surgeon



Dr. Eva Galka
Surgeon



Dr. David Linehan
Surgeon



Dr. Luke Schoeniger
Surgeon



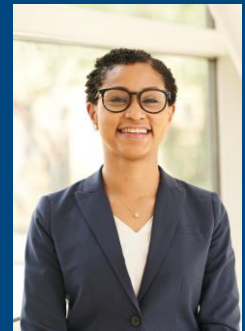
Joclyn Gaston
Nurse Practitioner



Alexandra Del Prince
Nurse Practitioner



Kristina Leahy
Nurse Practitioner



Yeliam Patel
Nurse Practitioner

Division of Hepato-Pancreato-Biliary-Gastrointestinal (HPB-GI) Surgery

OUR OFFICES

SURGICAL CENTER

Surgery Center at Sawgrass

160 Sawgrass Dr.,
Suite 120
Rochester, NY 14620
Phone (585) 271-7043

Wilmot Cancer Center

601 Elmwood Ave.
Rochester, NY 14642
Phone (585) 275-1611

Ambulatory Care, 2nd Floor (AC2)

601 Elmwood Ave.
Rochester, NY 14642
Phone (585) 275-5875

Wilmot Cancer Institute Webster

875 Hard Rd. Webster, NY
14580
Phone (585) 602-3150

Strong Surgical Center

Strong Memorial Hospital
601 Elmwood Ave.
Rochester, NY 14624
Phone (585) 275-8256

Getting Ready for Surgery

Surgery date: _____

With some preparation, you can prevent many problems during and after your surgery. Try to be as strong and healthy as possible before surgery.

Stay healthy:

- ✓ Quit smoking
- ✓ Exercise regularly. This could be your regular exercise routine or just gentle walking for 30 minutes a day.
- ✓ Limit or avoid alcohol. Drinking more than 2 alcoholic beverages a day (or more than 14 drinks a week) is considered high alcohol consumption. Alcohol use can weaken your immune system, weaken your heart, increase your stress response, and slow your healing. You can help decrease the chance of having complications from your surgery by not drinking alcohol for 4 weeks before your surgery. If you drink more than 2 drinks a day (or more than 14 drinks a week), we suggest you slowly reduce how many alcoholic beverages you are drinking and stop completely 4 weeks before your surgery.
- ✓ Eat a variety of healthy foods. Your body burns a lot of energy during and after surgery. Fuel up by increasing your calories from nutrient-packed foods.

Have a plan:

- ✓ Discuss your surgery with family, friends, and your support network
- ✓ Ask someone to help you when you get home. It might be easier to have more than one person help. You may need help with bathing, shopping, cooking, housework, and pet care.
- ✓ Coordinate transportation home from the hospital and to your follow-up appointments
- ✓ Read your pre-admission instructions. They will tell you what to bring to the hospital, what to leave at home, and how to prepare for your upcoming surgery.
- ✓ Review your pre-admission and medication instructions.

Stock up on the medicines, foods, and drinks you'll need before and after your surgery, including:



- Chewing gum – at least 15 pieces, any type you like. Chewing gum after surgery helps your digestive system recover more quickly.
- Gatorade®, sports drinks, or apple juice (clear, no pulp) – 24 oz.
- Liquid nutritional supplements. You will need at least 15 servings. *There is more information about nutritional supplements on page 6.*
- Senokot® senna laxative pills or any generic brand – 8.6 mg tablets
- MiraLAX® (8.3 oz.) powder or any generic brand

7 Days Before Surgery

Date: _____



- Stop taking vitamins and herbal supplements of any kind, unless your doctor tells you something different

5 Days Before Surgery

Date: _____



- Discuss aspirin use and anticoagulants (medicine that stops the blood from clotting) with your doctor. You may need to stop taking them for a while. Or your doctor may want you to take a different kind of anticoagulant until after surgery.
- Stop taking any non-steroidal anti-inflammatory agents (NSAIDs) such as ibuprofen (Advil®, Motrin®) or naproxen (Aleve®)

- Start drinking 3 bottles of nutritional supplements each day



Liquid nutrition supplements are high in protein and contain vitamins and minerals. They are usually available in a variety of flavors. You can find these at Walmart, Target, drug stores, and supermarkets.

Examples include Ensure[®], Impact Advanced Recovery[®], or Boost[®]. Many stores also have generic brands, which have the same basic ingredients.

See page 6 for a list of commonly available brands and serving sizes.

COMMONLY AVAILABLE NUTRITIONAL SUPPLEMENTS:



Supplement Name	Serving Size	Protein (grams)	Calories	For Diabetes?
BOOST PLUS [®]	8 oz.	14	360	
Boost Glucose Control [®]	8 oz.	16	190	Yes
Boost Breeze [®]	8 oz.	9	250	
Carnation Instant Ready to Drink [®]	8 oz.	10	240	*
Carnation Instant Breakfast Powder [®]	1 packet	5	130	*
Carnation Instant Breakfast Powder Light Start - No Sugar Added [®]	8 oz.	5	150	Yes
Ensure Plus [®]	8 oz.	13	350	
Ensure Enlive [®]	8 oz.	20	350	
Ensure Original [®]	8 oz.	9	220	
Ensure Clear [®]	10 oz.	8	180	
Ensure High Protein [®]	8 oz.	16	160	
Glucerna Shake [®]	8 oz.	10	180	Yes
Impact Advanced Recovery [®]	6 oz.	18	200	
Kellogg's Special K Protein Shake [®]	10 oz.	15	190	
Premier Protein [®]	11.5 oz.	30	160	
Premier Protein Clear [®]	16.9 oz.	20	90	Yes

*Available in "No Sugar Added" for people with diabetes

2 Days Before Surgery – Begin Bowel Prep





Date: _____

Bowel preparation (or bowel prep) is a way to make sure your bowels are empty before you have surgery. Cleansing your digestive system with laxatives before surgery decreases your risk of complications during and after surgery.

	In the morning, when you wake up	<input type="checkbox"/> Drink 17 grams of MiraLAX® mixed with 8 oz. of fluid (like water, coffee, or juice) <input type="checkbox"/> Take 2 Senokot® senna laxative tablets
	In the evening, before bed	<input type="checkbox"/> Take 2 Senokot® senna laxative tablets

1 Day Before Surgery

Date: _____

	<input type="checkbox"/> Call the surgical center to find out what time you should arrive and when your surgery will begin Strong Surgical Center Call (585) 275-8256 between 2:30 p.m. and 7:00 p.m. <u>Please note:</u> If your surgery is scheduled for a Monday, please call on the previous Friday
<p>I should arrive to the surgical center at: _____</p> <p>My surgery will begin at: _____</p>	
	In the morning when you wake up: <input type="checkbox"/> Drink 17 grams of MiraLAX® mixed with 8 oz. of fluid (like water, coffee, or juice) <input type="checkbox"/> Take 2 Senokot® senna laxative tablets
	<input type="checkbox"/> For breakfast and lunch, eat healthy, normal meals <input type="checkbox"/> For dinner, eat something soft and easy to digest, such as <i>eggs, skinless chicken, rice, bananas, applesauce, yogurt, Saltine crackers</i> <input type="checkbox"/> No solid foods after midnight. Clear liquids only!
	<input type="checkbox"/> Continue drinking your nutritional supplements



In the evening before bed:

- Drink 16 oz. of Gatorade®, sports drinks, or apple juice (clear, no pulp). *If you have diabetes, follow your doctor’s specific drink and medicine guidelines.*
- Take 2 Senokot® senna laxative tablets
- If you have diabetes, only give yourself **half the dose** of your nighttime long-acting insulin



- Shower or bathe with a chlorhexidine scrub brush – *we will give them to you ahead of time*

On the Day of Surgery

Date: _____



- If you sleep with a CPAP machine at home, bring it with you



- Do not eat any solid foods



- If you have diabetes, please **do not** take the following medications on the day of your surgery:


1. Short-acting or Regular Insulin – *you will not be eating*

- Other medications you should **not** take on the morning of surgery:

1. _____
2. _____
3. _____
4. _____


 <p>Only clear liquids, up to 2 hours before surgery</p> <p>No solid foods</p>	<p>YES </p> <p>Gatorade® or other sports drinks</p> <p>Apple, lemonade, or other fruit juice without pulp</p> <p>Clear nutritional supplements, like Ensure Clear®</p> <p>Tea or coffee (hot or cold) <u>without</u> added milk, milk products, creamers</p> <p>Soda</p> <p>Clear broth or bouillon</p> <p>Clear popsicles, Italian ice, or sorbets</p> <p>Clear Jell-O</p> <p>Water or flavored waters</p>	<p>NO </p> <p>Alcohol...of any kind</p> <p>Tomato, orange, or grapefruit juice</p> <p>Oatmeal or other cooked cereals</p> <p>Tea or coffee with added milk, milk products, creamers</p> <p>Milk, milkshakes, yogurt, sherbet, or smoothies</p> <p>Soups with meat, noodles, rice, beans, or vegetables</p> <p>Frozen treats containing milk, pieces of fruit, or other solid chunks</p> <p>Jell-O with fruit or pieces of fruit</p> <p>Any solid food, like meats, fats, bread, rice, or vegetables</p>
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On the Day of Surgery (continued)




2 hours before your arrival at the hospital:

- Drink 8 oz. of Gatorade®, sports drinks, or apple juice (clear, no pulp). *If you have diabetes, follow your doctor's specific drink and medicine guidelines.*



- Shower or bathe with a chlorhexidine scrub brush



- Take only the medicines we told you to take, at the usual time, before leaving for the hospital. You may take TYLENOL® (acetaminophen), if needed.

Take medicines with very little water, less than 1 oz. (2 tablespoons)

- Medications to take:

1. _____
2. _____
3. _____
4. _____



Remember to bring:

- Photo ID
- Completed Health Care Proxy (if not already on file)
- Comfortable clothes to wear home
- Chewing gum

After Surgery



- Be active. We will help you get out of bed just hours after your surgery. We expect you to walk several times per day, and be out of bed in a chair for all meals.

This is the most important thing you can do to help with a quick recovery. This will help speed up the return of bowel function, improve circulation, and prevent infection and blood clots.



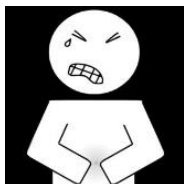
- Drink sips of clear liquids and ice chips as soon as you are awake, as directed by your team. Drink what you can without getting sick. Let your nurse know if you are feeling sick to your stomach.



- Chew gum for 20 minutes, 3 times each day. The gum – along with clear liquids – will help your bowels return to normal function faster.



- Start a clear liquid diet on the day after your surgery. Build up your diet each day until you can eat a regular diet without getting sick to your stomach. Eat small portions and chew very well.
- Drink liquids between meals. You may need fluids through your vein (IV or intravenous) if you are unable to drink enough fluids on your own.
- If you have an ostomy, a nutritionist will talk with you about eating and drinking.



- Expect some pain after major surgery. As soon as possible, we will switch you from IV pain medicines to medicines you can take by mouth.

We will carefully monitor your pain and work with you to control it as best as possible. Please speak up if your plan needs to be adjusted. If your pain level is too high, that will slow your progress.

After Surgery (continued)



- Catheter** – You will wake up from surgery with a tube (catheter) in your bladder. We will remove this as soon as possible. This could be as early as the morning after surgery, but each case is unique.
- JP Drain** – You will wake up with a Jackson-Pratt (JP) drain on your belly. It helps remove fluids that build up in your body after surgery. It's a thin rubber tube with a soft, round squeeze bulb. We will remove it within a few days after your surgery. *See page 17 for more information about the JP drain.*
- NG Tube** – You may wake up with a nasogastric (NG) tube. This is a temporary flexible tube from your nose to your stomach. It helps prevent after-surgery nausea, vomiting, and a swollen belly. We will remove it usually within 12-24 hours after surgery.



- You will receive an injection (shot) of Lovenox®
Lovenox® is a medicine that helps prevent blood clots. Your medical team may decide you need this medicine after you go home, too. If you do, we will teach you how to give yourself this shot before you go home.



- Every day, we will check your vital signs – blood pressure, heart rate, blood oxygen level, temperature, and respirations. For the first day or more, this will be done every 1 to 4 hours.
- We also will check your blood sugar every few hours. If you need insulin, we will give that to you.



- You will have daily goals. These include targets for activity, diet, and any consultations you need with nutrition, home care, social work, and physical therapy.

Going Home

The length of time you stay in the hospital depends on the type of surgery you have. You can go home when you are medically ready and it is safe for you. This could be anywhere from 2 to 5 days after your surgery. We will talk with you about going home (discharge) every day.

Generally, it will be safe for you to go home when:

- You are passing gas or stool (bowel movement/BM, feces, poop)
- Your pain is controlled with pills
- You are eating without feeling sick

How can I go home as soon as possible?

Here is what you can do to recover safely and get home sooner:

- Do your leg and breathing exercises as directed. Use the examples in this booklet.
- Slowly increase your activity as tolerated. If it hurts, stop.
- Remember to be up and walking at least 4 times each day. We encourage you to walk some stairs, too.
- Eat small, frequent meals throughout the day
- Chew your food well
- Little by little, start eating a variety of different, healthy foods
- Remember to drink plenty of fluids

Before you leave the hospital, your care team will review your discharge instructions with you. We will cover things like:

- Signs and symptoms of infection and when to call your doctor
- Home activity and lifting restrictions – lift no more than 10 pounds, which is about the same as a gallon of milk
- Showering and wound care, including care of your staples or stitches
- Medicine changes, including the possible use of Lovenox® injections (shots)
- Managing pain
- Follow-up appointments

Your doctor will let you know when it is safe for you to start driving again

You may need help from family and friends for the first few days.

Please make plans for extra help at home.



**Questions?
Call us!**

(585) 275-1611

How can I prevent infection?

Surgical site infections occur in the part of your body where surgery took place. Infections develop in about 1 to 3 out of every 100 patients who have surgery.

Things we do to prevent infection:

- We may remove some of your hair immediately before surgery using electric clippers, if the hair is in the area where the procedure will occur
- Give you antibiotics before your surgery starts
- Clean the skin at the site of your surgery with soap that kills germs

Things you can do before and after surgery to prevent infection:

- Good hand-washing is the best way to prevent infection
- Tell your doctor about other medical problems you may have. Problems such as allergies, diabetes, and obesity could affect your surgery and your treatment.
- Quit smoking. Patients who smoke get more infections. Talk to your doctor about how to quit. We can help!
- Do not shave near the surgery site. This can irritate your skin and make it easier to get an infection.
- Make sure that everyone on your healthcare team cleans their hands before examining you, either with soap and water or an alcohol-based hand rub.
- It is OK to remind us about clean hands or using gloves during your hospital stay
- Family and friends should wash their hands before and after visiting you. They should not touch your surgical wound or bandages.



Signs of infection include:

- Fever higher than 101° F
- Tender and red skin around your surgical site
- Thick or bad-smelling drainage from around the surgical site
- Vomiting for more than 8 hours
- Sever pain or pain that is getting worse
- Blood soaking through your dressing that requires you to change it every hour

How can I prevent blood clots?

A blood clot that forms in a deep vein can be a serious, life-threatening condition.

Your chances of developing blood clots are increased by surgery, being less active, being overweight, and smoking. To prevent blood clots:

- Wear intermittent pneumatic compression (IPC) devices or knee-high sleeves on your legs. IPCs help circulate blood by regularly inflating and deflating a cuff around your legs, similar to a blood pressure cuff. Wear these unless you are walking.
- Continue to do ankle and foot exercises regularly
- You might need a daily injection (shot) of Lovenox® to prevent blood clots. We will give this to you in the hospital. If you need this medicine after you go home, we will teach you how to give it to yourself.

Venous thromboembolism (VSE)

A blood clot that forms in a deep vein – usually the leg

Pulmonary embolism (PE)

A blood clot that breaks off and travels to the lungs

Foot and Ankle Exercises

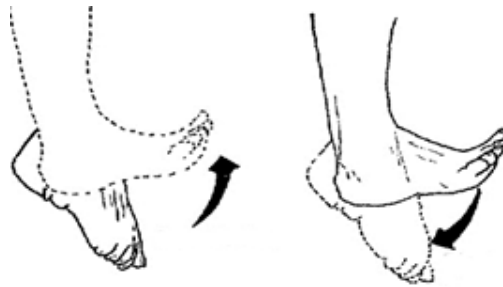
Help prevent blood clots by exercising your feet and ankles to your calf muscles moving

Exercise tips for success:

- Sit up straight – no slouching
- Start by repeating each exercise 2 to 3 times. Work up to doing each exercise 10 times.
- Try to do the exercises several times each day
- Do all exercises slowly

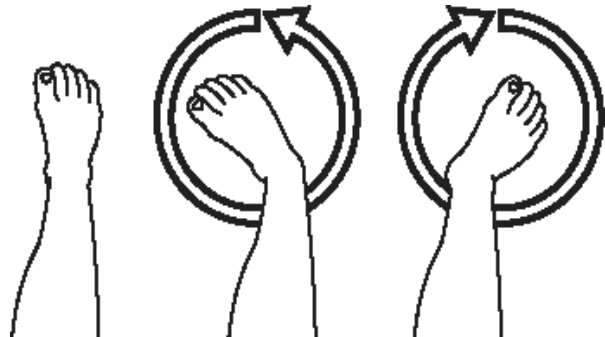
Ankle Pumps

Move each foot up and down like you are pressing down and lifting up on a car's gas pedal



Ankle Circles

1. Draw a circle in the air with each foot
2. Move only your ankle, not your whole leg
3. Draw another circle in the opposite direction



Ankle Alphabet

1. Write the alphabet in the air with each foot
2. Move only your ankle, not your whole leg
3. Complete the alphabet, taking short rests if needed



Preventing Lung Infections

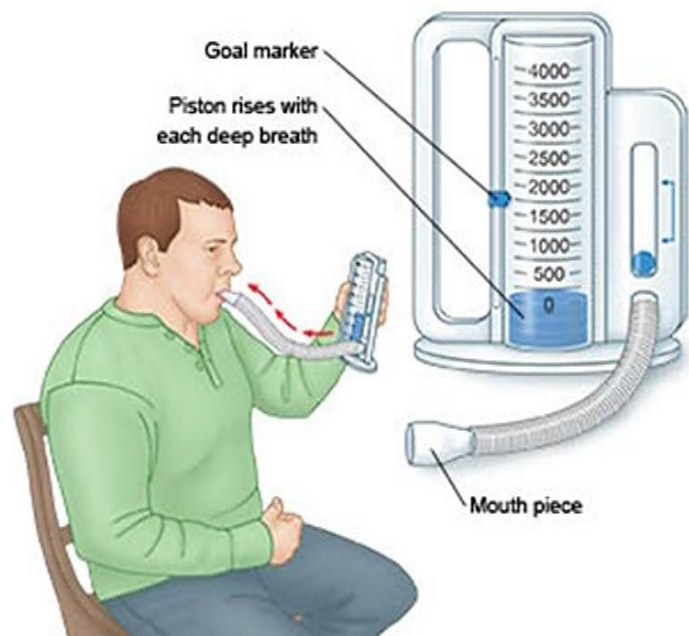
After surgery, lung infections can occur if you have a pre-existing lung condition or if you are less active than usual. To prevent lung infection:

- Use your incentive spirometer every hour while you are awake
- Practice deep breathing and coughing, if possible. While coughing, support your incision for comfort. Place your hands flat on top of each other and apply slight pressure to the incision. You can also hold a pillow firmly across the surgical site to help you breathe deeply and cough. Ask for pain medicine, if necessary.

Using an Incentive Spirometer

An incentive spirometer is a tool that helps you do breathing exercises. It measures how deep you inhale or breathe in. Your surgery team will ask you to do deep breathing exercises every hour to help your lungs.

1. Sit up straight in a chair or bed
2. Hold the spirometer upright
3. Place the goal marker on the level you need. Your goal is to make the piston (indicator) rise to that level.
4. Breathe out normally. Place the mouthpiece into your mouth and close your lips around it.
5. Slowly take a deep breath through your mouth. Suck in as deeply as you can to raise the indicator toward the goal marker. If the indicator does not rise up, make sure your lips are sealed tightly around the mouthpiece.
6. When you cannot breathe in any longer, hold your breath for 2 to 5 seconds.
7. Remove the mouthpiece from your mouth. Then, breathe out slowly.
8. Rest and breathe normally. The indicator will return to the bottom.
9. Repeat as many times as ordered by your doctor.



When you are done, try to cough a few times. This will help remove fluid in your lungs and keep your lungs clear.

Jackson-Pratt (JP) Drain

The Jackson-Pratt (JP) drain is a tube that prevents body fluid from collecting near the site of your surgery. The drain pulls fluid (by suction) into a bulb. You will need to empty and measure the fluid collected in the bulb.

Empty the bulb when it is half-full, approximately every 8 to 12 hours.

Emptying the Bulb

Before you start, wash your hands well with soap and water.

1. Pull the plug out of the bulb.
2. Do not touch the inside of the stopper or the inner area of the opening in the bulb.
3. Turn the bulb upside down.
4. Gently squeeze the bulb and pour the fluid into the measuring container we gave you.
5. Turn the bulb right side up.
6. Squeeze the bulb flat in a fist, until you feel your fingers in the palm of your hand.
7. Continue to hold the squeeze while re-plugging the stopper.
9. Check to see if the bulb is still flat, to ensure gentle suction.
10. Pin the drain to the inside of your clothing.
11. Write the amount of fluid you collected in the log we gave you.
12. Flush the fluid down the toilet and rinse the measuring container with water.

At first, the fluid is bloody. Then, as your wound heals, the fluid changes to light pink, light yellow, or clear.

Bring your log with you to your follow-up appointment.

Sample JP Drain Log:

Date/Time	8 am	2 pm	9 pm	Total
Jan 2	55 ml	45 ml	40 ml	140 ml
Jan 3				
Jan 4				

Information & Resources

Wilmot Cancer Institute

<http://www.urmc.rochester.edu/cancer-institute>

National Cancer Institute

<https://www.cancer.gov/>

Search for your cancer type. There is detailed information regarding the diagnosis, staging, treatment, and follow-up for patients with tumors of the liver and pancreas. Includes information about clinical trials.

American Cancer Society

<https://www.cancer.org/cancer/index>

Find resources to help you and your loved ones manage your lives through treatment and recovery, and get the emotional support you need. Can also help connect you to additional free or low cost resources from other organizations in your area.

Journal of Clinical Oncology®

<http://ascopubs.org/journal/jco>

Latest information about results of clinical trials, new information, new treatments, and news about gastrointestinal tumors (including tumors of the liver and pancreas). This information is written at a scholarly level.

Pancreatic Cancer Action Network®

<http://pancan.org>

The Pancreatic Cancer Action Network offers a variety of services, information and support in the form of patient services, research initiatives, and a research grants program.

YouTube

<http://www.youtube.com/watch?v=x4NJTNLq3xw>

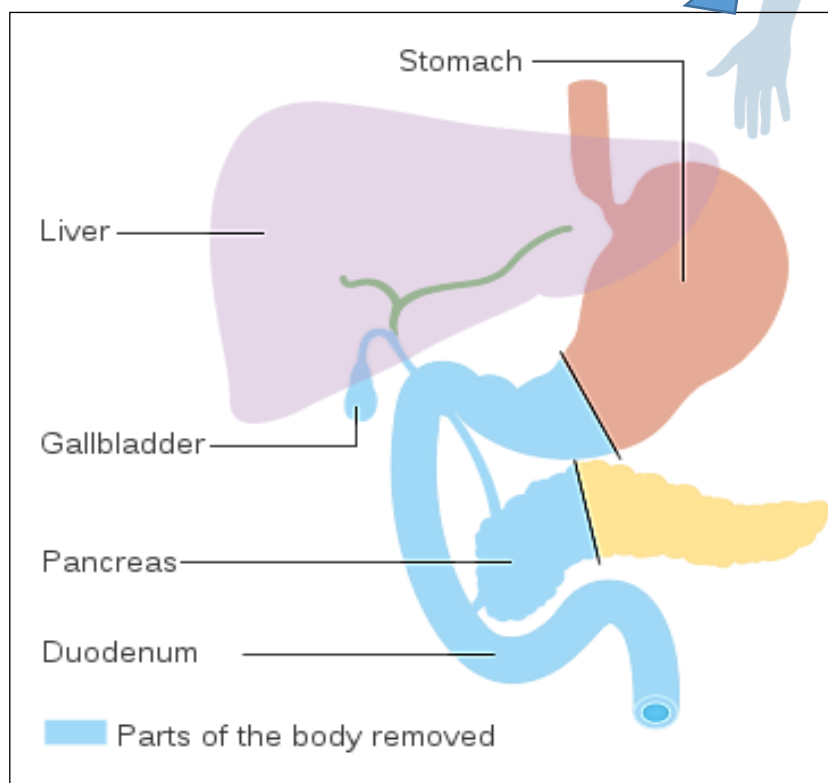
“What is the Whipple Procedure” video explanation by our colleague Dr. William Hawkins posted on the Siteman Cancer Center channel (or search “whipple siteman”)

Whipple Procedure

In the Whipple Procedure, the surgeon removes cancerous sections of these organs:

- Pancreas
- First part of the bowel, called the duodenum (doo-ow-DEE-nuhm)
- Common bile duct
- Gallbladder
- Lower part of the stomach, if needed

This simplified diagram shows the parts of the body removed during surgery.



Source: Cancer Research UK via Wikimedia Commons



Reviewed and updated, April 2022