Whipple Procedure:
A guide for patients and families

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Introduction

What is this booklet about?

This patient education booklet will help you understand the Whipple procedure and give you information about the benefits and risks involved with this surgery.

Using this booklet will help you to know more about your Whipple procedure and give you the knowledge and resources to be involved in your care. We call this being a “partner in your care”.

This booklet has general information only and does not talk about any specific health care concerns. Please talk to your doctor if you have questions about your care.

Your Hepato-Pancreato-Biliary (HPB) Surgical Oncology Team at UHN

Your Hepato-Pancreato-Biliary (HPB) surgical team specializes in cancer surgery of the pancreas, liver, gallbladder or bile duct. This team is made up of experts in HPB surgery and leaders in research. Our surgeons work together as a team to give you the best possible care.

You will also be cared for by a large team of health care professionals including:

- Surgical Fellows and Residents
- Interventional Radiologists
- Medical Students
- Registered Nurses
- Pharmacists
- Physiotherapists
- other health care professionals

These experts will all be there to support and guide you through the Whipple procedure.

The McCain Centre for Pancreatic Cancer at UHN

The McCain Centre for Pancreatic Cancer supports patients and families with pancreatic cancer (also called adenocarcinoma) at the Princess Margaret Cancer Centre. The McCain Centre has a multidisciplinary team. This team includes Medical Oncologists, Surgeons, Nurses, Social Workers, Dietitians and many others who all work together to make sure that you receive the highest quality care. Patients with suspected or confirmed pancreatic cancer may be referred to the McCain Centre as part of their diagnosis or treatment.
The Whipple procedure

What is a Whipple procedure and why is it done?

The Whipple procedure is also called a “pancreatectoduodenectomy.”

It is a major surgery to help patients with pancreatic cancer or cancer in the area of the pancreas, and cancer of the bile duct.

The Whipple procedure is most often used to remove a cancerous tumour in the pancreas (see picture 2 on page 5). But it is also used to treat:

- cancer of the distal bile duct (a duct that sends bile to the small intestine)
- cancer of the duodenum (part of the small intestine)
- cancer of the ampulla of Vater (a specialized valve that joins the pancreatic and common bile ducts)
- chronic conditions that are not cancerous, such as pancreatitis (swelling of the pancreas)
- pre-cancerous cysts and tumours

Sometimes the problem may not be clear and your surgeon may advise you to have surgery because there is a chance of cancer.

What is the pancreas and what does it do?

The pancreas is a 6 to 10 inch (18 to 25 centimetres) long gland that is found deep behind your stomach.

- It is spongy and shaped like a tadpole or a tear drop.
- The largest part is the head of the pancreas. It is attached to your duodenum (first part of the small intestine).
- The body and tail of the pancreas are next to your spleen to the left side of your abdomen.
- There is a duct or tube that runs along your pancreas.
  - This duct is connected to a similar tube that comes from the liver which brings bile to your duodenum.
  - Bile is an important fluid that digests fat.
The pancreas is part of your digestive system and makes important enzymes and hormones that help break down your food.

**The pancreas has 3 main jobs:**

1. It releases digestive juices directly into your bloodstream and into the bile duct.
2. It releases digestive juices and enzymes into your small intestine to break down your food after it has left your stomach.
3. It makes the hormone called **insulin**, which controls the level of sugar in your blood.

**What happens during the Whipple procedure?**

During a Whipple procedure, the following are removed:

- part of the stomach
- the small bowel (duodenum)
- the head of pancreas
- the lower end of the common bile duct
- the gallbladder

After these organs are removed, the surgeon attaches the remaining pancreas, bile duct and stomach to the intestine. This allows pancreatic juice, bile and food to flow back into the gut, so that digestion can happen normally.

**How long is the Whipple procedure?**

This surgery normally lasts between 4 to 8 hours.
Picture 2: Before and after a Whipple procedure

BEFORE SURGERY

Liver
Common Bile Duct
Gall Bladder
Duodenum
Stomach
Pancreas
Superior Mesenteric Vein
Esophagus

AFTER SURGERY

Liver
Common Bile Duct
Stomach
Pancreas
Jejunum
Esophagus

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When is a Whipple procedure not possible?

Before the surgery, your surgeon asks you to do tests to find out if your cancer has spread. About 5% to 20% of the time (or 5 to 20 people out of 100) during the Whipple procedure, the surgeon finds problems that could not have been found before surgery, even with excellent imaging (radiology) tests. This may include if your cancer spread to other organs, or the cancer is attached to important parts of your body and cannot be removed.

Your surgeon may still do bypass surgery so your bile duct or stomach is not blocked in the future.

You may also get a referral to a Medical Oncologist who will talk to you about other treatments for your cancer. Usually this treatment involves chemotherapy.

What are the benefits of a Whipple procedure for people with cancer?

The procedure is used to completely remove the cancer and give you the best outcome.

During a Whipple procedure, your surgeon removes tissue around the area that has cancer. This lowers the chance of your cancer coming back. But, the chance of your cancer coming back also depends on the type of tumour that you have and stage of the cancer.

All tissues that were removed during your surgery are tested by a pathologist. He or she tells your surgeon the type of cancer you have and its stage. Your surgeon then talks with you about your cancer and any other treatments.

What are the risks and possible complications of the procedure?

A “risk” is the chance that something might go wrong during a procedure.

Your surgeon and anesthetist will talk with you about the risks and possible complications of the Whipple procedure. Ask as many questions as you need to understand the procedure and what to expect.

The Whipple procedure is major surgery. There is always the chance of complications with every surgery. Our interprofessional team, including your surgeon, anesthetist, nurses and other health care providers will try to reduce any risks and complications.
Some possible complications from a Whipple procedure are:

- Complications linked to anesthesia
- Chest infection and problems with breathing
- Bleeding during, or after the procedure (a blood transfusion may be needed)
- Infection in the surgical cut (surgical site infection)
- Blood clots
- Anastomotic leaks
  - The ends where the pancreas, bile duct and stomach were re-connected to the intestine is called an anastomosis. The anastomosis may not heal well. In this case, digestive fluids can leak into the abdomen.
  - Your surgeon may leave a drain tube in your abdomen at the end of the procedure to watch for and remove any fluid after surgery. For most patients the leakage will heal on its own. Sometimes patients need another operation to fix this problem.
  - Your surgeon may place a small, thin plastic tube at the joint between the pancreas and intestine. This is called a pancreatic stent. It stops leaking and helps the joint to heal. This stent may remain in place for weeks, months or years after your surgery. You will not feel it and it will usually pass through your intestines and exit your body in a bowel movement at some time after you have left the hospital.

Other unexpected complications can happen in any patient having a major surgery. Your surgeon will talk with you about all possible risks and complications.

What are long-term effects for me after a Whipple procedure?

<table>
<thead>
<tr>
<th>Long-term effect</th>
<th>What to expect</th>
<th>What can I do about it?</th>
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<tr>
<td>Mal-absorption (having trouble absorbing nutrients from food)</td>
<td>When part of the pancreas is removed, there are fewer enzymes made to help digest food. This may cause poor digestion of food and result in loose stools that are greasy, pale and tend to float.</td>
<td>• To help, pancreatic enzyme capsules may be prescribed for you to take with each meal.</td>
</tr>
<tr>
<td>Long-term effect</td>
<td>What to expect</td>
<td>What can I do about it?</td>
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<tr>
<td>Changes in your diet</td>
<td>It may take several months for your digestion to return to normal.</td>
<td>• Eat small amounts of food at one time.</td>
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<tr>
<td></td>
<td></td>
<td>• Your Dietitian will give you advice about foods to eat and what vitamins to take.</td>
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<tr>
<td>Losing weight</td>
<td>It is common to lose weight with illness and with major surgery.</td>
<td>• Talk to your health care team if you have concerns about your weight.</td>
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<tr>
<td></td>
<td>It may take about 3 months after surgery to start regaining any lost weight.</td>
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The long-term effects of the Whipple procedure are limited. Patients can live a normal life with a regular diet and maintain their energy, weight and lifestyle.

**Will I develop diabetes after my Whipple procedure?**

Your pancreas makes insulin and controls your blood sugar. Since part or all of your pancreas is removed during the Whipple procedure, there is a chance that you may develop diabetes.

Patients who have diabetes before surgery will need to adjust their diabetes medicine after surgery.

**What else do I need to know about the Whipple procedure?**

**How do I prepare for my Whipple procedure?**

It is important for you to know all you can about getting ready for your Whipple procedure. To help, you will be given a copy of the UHN “My Surgery” Patient Education Binder. This binder is your guide and personal tool to help you understand and take part in your surgical care.

Please read these pages in your “My Surgery” binder.
<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
<th>Topics</th>
</tr>
</thead>
</table>
| My Surgery                 | Pages 5 to 10    | • Preparing for my surgery  
• Important dates and times to remember  
• Planning to go home after surgery  
• Family involvement in my care |
| About the Hospital         | Pages 11 to 14   | • Your Healthcare Team  
• Privacy and confidentiality  
• Hospital services |
| Before and During My Surgery | Pages 15 to 32   | • My Pre-Admission Clinic visit  
• My Surgery check lists  
• Day of my surgery  
• Important things to remember  
• Suggested videos to watch before your surgery |

If you do not have this binder, please call 416 340 4800 extension 7063. You can also download the binder at [www.uhn.ca](http://www.uhn.ca). Click on “Surgery patients” on the home page.

### What anesthetic will I have?

Your anesthetist will talk with you about your anesthesia during the procedure, and about different choices for pain management after your Whipple procedure.

**General anesthetic**

During general anesthesia, you are put completely to sleep and you breathe through a breathing tube. It is normal to have a sore throat after your Whipple procedure.

**Epidural Anesthetic and Patient Controlled Analgesia (PCA)**

An epidural is a small tube placed within your back by a doctor. The epidural is used by your anesthetist to give you pain relief medicine during and after your surgery.

After your surgery, a pump is attached to the epidural tube to give you pain medicine all the time. You can press the button to get more pain medicine if you need it.

**IV Patient Controlled Analgesia (PCA)**

For IV PCA, a small tube is put in the vein in your arm. After your surgery, a pump is attached to your IV tube to give you pain medicine.
IV PCA lets you to treat your own pain without having to wait for a nurse to give you the medicine. You give the pain medicine to yourself by pressing a button at any time.

**After my Whipple procedure**

To learn about what will happen after your Whipple procedure, read the “After My Surgery” section in your “My Surgery” binder.

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
<th>Topics</th>
</tr>
</thead>
</table>
| After My Surgery| Pages 33 to 46 | • What will happen after my surgery?  
• My recovery in hospital  
• My medications  
• Taking care of myself (pain management, activity, caring for my incision etc.)  
• Important things to remember |

If you have any questions about what will happen after your surgery, talk to a member of your health care team.

**How long will I be in hospital after my Whipple procedure?**

Most patients will stay about 6 to 8 days in hospital, and then go home after the surgery.

**What happens when I return home?**

- When you return home, it will be hard for you to move for the first few weeks. You will probably need some help from family or visiting health care professionals. Keep moving as much possible and rest when you need to. You may return to your normal activities after 2 or 3 months. There are usually no limits on your activities after that time.
- You will be able to eat normally again over the next few months.
- You may feel a change in your mood, such as feeling “down” or low (depressed). The General Surgery team has a support program to help you. Please call the Nurse Navigator at 416 262 1992.
For more information about going home, read the “Planning To Go Home” section of your “My Surgery” binder.

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<thead>
<tr>
<th>Section</th>
<th>Pages</th>
<th>Topics</th>
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<tbody>
<tr>
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<td>Pages 48 to 50</td>
<td>• Preparing for discharge</td>
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<td></td>
<td>• Taking care of myself at home</td>
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<td></td>
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<td>• Who can help me at home?</td>
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<td>• My follow-up visit</td>
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You should also read your “Going Home After Surgery” booklet. If you have not been given this booklet, please talk to member of your HPB team or call the Nurse Navigator at 416 262 1992.

**Will I need more treatment for my cancer?**

If you have had a Whipple procedure for cancer, chemotherapy is usually recommended for 4 to 6 months after the surgery. You usually start chemotherapy when you have recovered from your surgery (about 6 to 12 weeks later).

You will be referred to see a Medical Oncologist to talk about chemotherapy.

**How to get help at home**

**After I leave the hospital, when should I call my doctor or Nurse Navigator?**

If you have a medical emergency, go to the closest Emergency Department.

**Call your family doctor if you have:**

- A fever (over 38 °Celsius or 101 °Fahrenheit)
- More pain than usual or the pain in your surgical cut is getting worse
- Nausea, vomiting or diarrhea that does not go away
- Jaundice (have yellow eyes, dark urine)
- Red and painful, or a smelly discharge at your surgical cut
How can I contact my surgical team?

Your surgeon is part of the HPB Surgical Oncology Team at UHN.

Please call the phone number below to reach a member of your HPB team.

If your call is not answered, leave a message and we will call you back within 48 hours or on the next business day.

HPB Surgical Oncology Team
Gastrointestinal (G.I.) Clinic
Princess Margaret Hospital – 4th Floor
Phone: 416 946 2868

We check messages Monday to Friday between the hours of 9:00 am and 4:30 pm

After your discharge

Leaving the hospital is called being “discharged.” If you have questions or concerns after you leave the hospital, call the Nurse Navigator at 416 262 1992.
# Websites that may help you

## The Pancreas

<table>
<thead>
<tr>
<th>Johns Hopkins Medicine: What is the pancreas?</th>
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## Pancreatic cancer

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<tr>
<th>Canadian Cancer Society</th>
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<tr>
<th>Pancreatic Cancer Canada</th>
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<tr>
<td><a href="http://www.pancreaticcancercanada.ca">www.pancreaticcancercanada.ca</a></td>
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<tr>
<th>Pancreatic Cancer – general</th>
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## Whipple procedure

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<th>MedlinePlus – National Library of Medicine (Video)</th>
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<tr>
<th>Pancreatic Cancer Action Network: Nutrition after a Whipple procedure</th>
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<tr>
<th>Johns Hopkins Medicine: The Whipple Procedure and Other Pancreas Surgeries</th>
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## Cancer – general

<table>
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<tr>
<th>Canadian Cancer Society</th>
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<td><a href="http://www.cancer.ca">www.cancer.ca</a></td>
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<td><a href="http://www.wellspring.ca">www.wellspring.ca</a></td>
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<th>Gilda’s Club</th>
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<td><a href="http://www.gildasclubtoronto.org">www.gildasclubtoronto.org</a></td>
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Where can I find more information?

For more information on the Whipple procedure, on pancreatic cancer or on any other health topic, talk to the librarians in:

**The TGH Patient and Family Learning Centre and Library**
Location: TGH, Norman Urquhart Building (NU), Level 1
Hours: Monday to Friday 8:30 am to 4:30 pm (closed weekends and holidays)
📞 Phone: 416 340 4800 extension 5951
✉️ Email: tgpen@uhn.ca
🌐 Website: www.uhnpatienteducation.ca

**The Patient & Family Library**
Location: Princess Margaret Cancer Centre, main floor (near the atrium)
📞 Phone: 416 946 4501 extension 5383
✉️ Email: patienteducationpmh@uhn.ca
🌐 Website: www.library.theprincessmargaret.ca

This booklet was reviewed by the Patient and Family Education Program.