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COLUMBIA UNIVERSITY

*College of Physicians
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COLUMBIA UNIVERSITY
MEDICAL CENTER

Herbert Irving Comprehensive Cancer Center

The Pancreas Center

The Pancreas Center

Herbert Irving Pavilion, 8th Floor

161 Fort Washington Avenue, New York, NY 10032

www.pancreascenter.com



To heal is not simply to prescribe, but it is to understand human nature, to use compassion, to show commitment and to remain hopeful.

COMPASSION. COMMITMENT. HOPE

A diagnosis of pancreatic cancer can be incredibly stressful for patients and families. At the **Pancreas Center of the Herbert Irving Comprehensive Cancer Center/NewYork-Presbyterian**, we strive to decrease the burden of the disease by providing highly coordinated, compassionate and dedicated patient care.

The Pancreas Center is founded on the principle that treatment of pancreas disorders demands a commitment to collaboration in patient care. In addition to upholding an exacting standard of compassionate, team-oriented clinical medicine at the Center, we deeply value the insights of medical research and continually pursue new avenues of diagnosis and treatment. These are some of the reasons patients come to us from all over the world.

Long considered an insurmountable disease, pancreatic cancer research has entered a new era of progress and optimism. Many talented young scientists have committed themselves to careers in this area, an important shift made possible by new sources of funding. Our laboratory plays an integral role both in training such scientists as well as conducting basic and translational research. Targeted therapeutics addressing specific molecular pathways are now entering clinical trials at NewYork-Presbyterian/Columbia. Meanwhile, two unique programs – the Pancreatic Cyst Surveillance Program and the Muzzi Mirza Pancreatic Cancer Prevention and Genetics Program – are helping to prevent and detect pancreatic cancer in high-risk patients before progression to advanced forms of the disease.

The expertise of the practitioners at the Center, together with the benefits gained from being part of a large institution with a track record of excellence in research and patient care, make it possible for us to maintain our position at the forefront of imaging applications, surgical techniques, risk stratification, screening, and early detection of pancreatic disorders.

A handwritten signature in black ink, appearing to be 'JAC', written in a cursive style.

John A. Chabot, MD, FACS, David V. Habif Professor of Clinical Surgery
Executive Director – The Pancreas Center
Division Chief – Endocrine & GI Surgery
Associate Director of Clinical Affairs – Herbert Irving Comprehensive Cancer Center

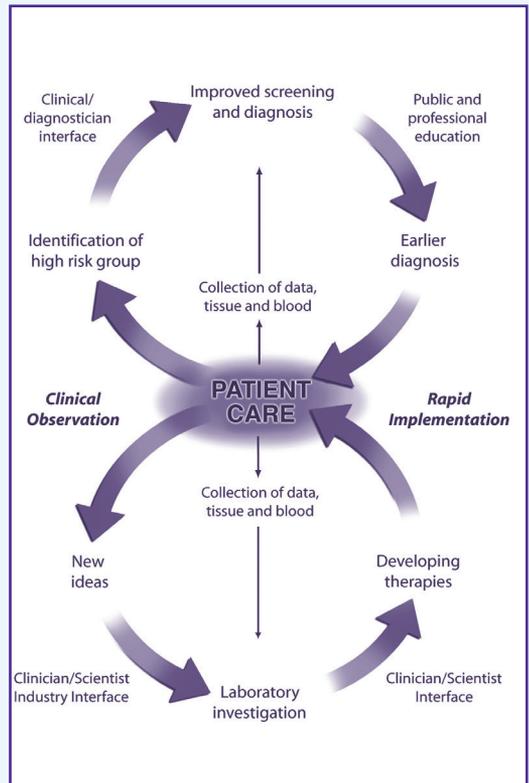
Mission Statement

The mission of the Pancreas Center at NewYork-Presbyterian/Columbia University Medical Center is to be a center of excellence dedicated to decreasing the burden of pancreatic cancer and making it a controllable illness by providing outstanding medical care, conducting breakthrough research, pioneering prevention and early detection techniques, educating patients and clinicians, and training physicians to become experts in the treatment of pancreatic cancer.

Goals

- Significantly increase the cure rate of individuals with pancreatic cancer
- Maintain best possible quality of life for individuals with pancreatic cancer
- Be the regional center with the most experience in treating pancreatic cancer
- Provide genetic testing and counseling for at-risk individuals
- Understand the etiology and biology of the disease via clinical, translational, and basic science research
- Be a magnet site for industry and the medical community to test new concepts in pancreatic cancer care
- Reverse the fatalism that is commonly expressed about pancreatic cancer

Integrated Cycle of Patient Care and Research



Referrals and Scheduling New Appointments at the Pancreas Center

New Patient Appointments: New patients or their referring physicians may schedule an appointment at the Pancreas Center by contacting the new patient coordinator at 212.305.9467. Reports of recent studies (CT, MRI, EUS) should be faxed or delivered to the center for review by a physician or nurse practitioner; after these records are reviewed, the Pancreas Center coordinator will schedule an appointment with the appropriate specialist or department.

Specialists involved in the care of our patients include:

- Pancreas Surgeons
- Oncological Gastroenterologists
- Interventional Gastroenterologists
- Radiologists
- Oncologists
- Pathologists
- Nurse Practitioners
- Pain Management Specialists
- Psychosocial Interventional Social Work Support Services
- Clinical Nutritionist

Multidisciplinary Care: Every patient's case is presented and reviewed at a weekly multidisciplinary meeting where the entire clinical team determines the patient's plan of care. This team, which includes interventional endoscopists, surgeons, medical oncologists, genetic specialists, and radiologists, reviews the case of every new patient as well as the progress of every current patient under the center's care. Based on the team's determination, patients will then continue to be actively monitored, will begin or continue chemotherapy, or will prepare for surgery.

Pancreas Center Clinical Coordinators

Telephone: 212.305.9467 • Fax: 212.305.1571

SURGICAL EXPERTISE

The surgical team of the Pancreas Center is comprised of highly skilled and highly experienced specialists. Studies have shown that patients who undergo pancreas surgery at a high-volume center, one that performs more than 16 pancreas operations per year, experience fewer operative complications and enjoy more successful outcomes. The Pancreas Center performs nearly 200 pancreas resections per year.

Pancreatic Cancer

Pancreatic cancer is one of the most challenging diseases physicians face today because it responds poorly to treatment and it quickly spreads to surrounding organs.

Common types of pancreatic cancer include:

- Pancreatic adenocarcinoma: Cancer of the ductal cells of the pancreas. This type accounts for over 75% of pancreatic cancers.
- Neuroendocrine tumors: There are several types of neuroendocrine tumors. Together they account for 5% of patients with pancreatic cancer.
- Intraductal Papillary Mucinous Neoplasms (IPMNs): Precancerous lesions that are often a precursor to pancreatic cancer.

Risk factors: The main risk factor for pancreatic cancer is cigarette smoking, which also appears to accelerate tumor growth. A family history of pancreatic cancer and hereditary cancer syndromes also greatly increase risk, contributing to about 10% of cases. Most people diagnosed with the disease are between the ages of 60 and 80, although those with an inherited predisposition are usually diagnosed much earlier.

Symptoms: Gastrointestinal symptoms such as abdominal pain, bloating, nausea, and changes in the stool are the most common. Other symptoms include jaundice and rapid weight loss. Some people experience dull back pain. In rare cases, unexplained early-onset diabetes (diagnosed before age 50) can be another important symptom.

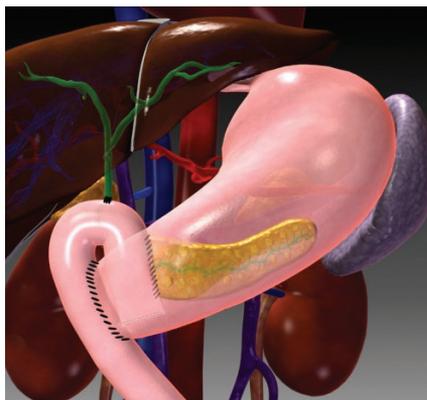
Diagnosis: Early detection of pancreatic cancer can profoundly impact one's chances of survival. Our center offers a highly innovative risk-assessment program that provides safe and accurate screening strategies to identify a patient's degree of risk for developing the disease (see the Muzzi Mirza Prevention and Genetics Program, page 11). We also offer a unique Pancreatic Cyst Surveillance Program (see page 9) designed to ensure that patients who have any form of pancreatic cyst receive proper monitoring and treatment over time, so that they do not progress to pancreatic cancer. Critical to these efforts are our radiologic experts, who have extensive and advanced expertise in performing biopsies and visualizing pancreatic tissues. Our specialized team collaborates to obtain a patient's diagnosis and rapidly commence treatment, providing immediate access to our specialists.

Treatment of Pancreatic Cancer

Surgery: Surgery followed by chemotherapy is the standard treatment for pancreatic cancer. About one third of patients are inoperable because of blood vessel involvement. At the Pancreas Center, neoadjuvant chemotherapy and radiation has become a routine approach to inoperable patients, thereby increasing the opportunity for cure.

The Pancreas Center offers multiple and innovative surgical options for removal of pancreatic tumors. Some of the more common procedures we perform include:

Whipple procedure: The Whipple procedure, or pancreaticoduodenectomy, is used to treat tumors located in the head of the pancreas. The conventional Whipple involves removal of the head of the pancreas, the duodenum, and a portion of the stomach, as well as the gallbladder and a portion of the bile duct. A variation of the Whipple called the pylorus-sparing Whipple preserves the stomach.



Pioneered at Columbia, the Whipple procedure is the most common pancreatic cancer operation. A portion of the pancreas is removed, together with the lower portion of the stomach, the duodenum (first part of the small intestine), the gallbladder, and part of the common bile duct. The remaining bile duct and pancreas are attached to the small intestine.

Total Pancreatectomy: This surgery is used when malignant cells have invaded most of the pancreatic tissue or when trying to prevent pancreatic cancer. Because the entire pancreas is removed, the patient becomes an insulin-dependent diabetic, unless islet cell transplantation is also performed.

Central Pancreatectomy: This operation is used to remove tumors in the neck or body of the pancreas. It preserves the head and tail of the pancreas, which usually decreases the chance of developing insulin-dependent diabetes.

Distal Pancreatectomy: In this surgery, the tail and body of the pancreas are removed, and the head of the pancreas is preserved. Since the spleen is so close to the tail of the pancreas it may also be removed during the procedure.

Minimally Invasive Pancreatectomy: Laparoscopic and robotic approaches to pancreatectomy are becoming routine for us. Patients tend to experience shorter hospital stays, reduced blood loss and fewer complications.

Robotic Pancreatectomy: Robotic pancreatectomy is a novel and dynamic minimally invasive approach to pancreatic surgery (distal, proximal, central, and total pancreatectomies) requiring expertise both in pancreatic surgery and robotic techniques. Patients benefit from surgical precision of the new technology with earlier discharge, less pain, and for some, an increased chance at spleen preservation.

Vascular Resection: About one third of patients diagnosed elsewhere with pancreatic cancer are told they are ineligible for surgery due to their tumors encroaching on or encasing nearby blood vessels. Our center is able to perform surgery in many such patients, offering them lengthened survival rates equal to “resectable” patients. Vascular resections are done at least weekly at this center, compared to very rarely at other institutions. We have performed over 244 vascular resections since 2006, with a high success rate.

Nanoknife: Also known as irreversible electroporation, the nanoknife is a new technology that expands our ability to treat patients with locally advanced pancreatic cancer.

Gastroenterology and GI Endoscopy

The Pancreas Center receives referrals from a number of primary care physicians and gastroenterologists. The endoscopic reports we receive are the first diagnostic tool used for the patient workup. For those patients who do not have access to modern endoscopy options, we refer patients to our Pancreas Center endoscopists. Our GI endoscopy physicians are highly skilled and perform over 700 EUS and ERCP procedures each year.

Interventional Endoscopy Procedures: The following procedures are performed at The Pancreas Center.

Endoscopic Ultrasound (EUS): Provides detailed images of the pancreas and surrounding tissues including the liver, blood vessels, and lymph nodes. EUS relies on high frequency sound waves to create a picture of the organs.

Endoscopic retrograde cholangiopancreatography (ERCP): Allows the physician to visualize the bile and pancreatic ducts. The study is often performed when a patient exhibits symptoms of jaundice, which can indicate presence of a mass narrowing or blocking the ducts.

Choledochoscopy and Pancreatoscopy: Pancreas center endoscopists frequently employ the latest technology for evaluation of the bile and pancreatic ducts with direct visualization using the SpyGlassT Direct Visualization System® for single operator duodenoscope assisted cholangiopancreatography (SODAC). This procedure allows visually directed diagnostic and therapeutic interventions.

Intraductal Ultrasound (IDUS): Used by endoscopic gastroenterologists at The Pancreas Center to better visualize tumors and cysts within the pancreas gland itself, IDUS uses mini probes less than 2mm in size which can be passed through standard endoscopes directly into pancreatic ducts for more accurate, higher resolution images.

Altered Anatomy ERCP—Double Balloon and Minimal Access Surgery Techniques: For patients with difficult post-surgical anatomy who are not candidates for endoscopic rendezvous procedures, ERCP can now often be accomplished with standard ERCP accessories using a double balloon endoscope system.

Pancreatitis

Pancreatitis occurs when secretions build up and begin to digest the organ itself. The pancreas and surrounding blood vessels start to swell, and bleeding and infection damage the gland. If this damage persists, the pancreas may not be able to carry out its normal functions. Pancreatitis has a range of possible causes, including gallstones, alcohol use, and severe viral or bacterial infection. Sometimes no cause of pancreatitis can be found. Pancreatitis can present as acute and painful temporary attacks called acute pancreatitis or may be a chronic condition developing over a period of years, termed chronic pancreatitis.

Diagnosis of Pancreatitis: Clinical diagnosis of pancreatitis occurs through blood work, including testing the levels of the lipase and amylase enzymes. Radiology imaging such as MRI or CT scan can also be used as well as abdominal ultrasound to check for gallstones. An endoscopic ultrasound (EUS) or endoscopic retrograde cholangiopancreatogram (ERCP) can be used in the diagnosis of chronic pancreatitis. Depending upon the extent and the cause of pancreatitis, treatment may require surgery.

Acute Pancreatitis: Acute pancreatitis attacks are typically mild, but about 20% are severe. These attacks last for a short time and usually resolve completely as the pancreas returns to its normal state. Some people may experience a single attack while others may have multiple episodes. The development of a pancreatic pseudocyst, (abnormal deposits of tissue, fluid and debris) can result after episodes of acute pancreatitis, typically 1 to 4 weeks after onset.

Common Symptoms of Acute Pancreatitis: Symptoms associated with acute pancreatitis include severe, steady pain in the upper-middle part of the abdomen often radiating to the back, jaundice (yellowing of the skin and whites of the eyes), low grade fever and nausea or vomiting. Some people experience abdominal bloating and tenderness or develop unusual abdominal hardness or a mass that can be felt.

Treatment for Acute Pancreatitis: For mild attacks, treatment includes discontinuing alcohol use and switching to a liquid diet until the inflammation subsides. Based on the severity of the attack, treatment may include hospitalization to administer intravenous pain medication and fluids.

Chronic Pancreatitis: In chronic pancreatitis, there is a decrease in the secretion of enzymes needed for digestion and absorption of dietary fats. Fat digestion is impaired, resulting in fatty stools. This is called exocrine insufficiency. Diagnostic scans may find stones or areas of calcified tissue within the pancreas.

Common Symptoms of Chronic Pancreatitis: Symptoms associated with chronic pancreatitis are often similar to the ones listed above for acute pancreatitis. People may also have pale colored, oily stools. Due to inability to digest food, rapid weight loss can occur. Another common symptom of chronic pancreatitis is high triglyceride levels in the blood which may also indicate adult onset diabetes (diabetes mellitus type 2).

Treatment for Chronic Pancreatitis: Treatment focuses on avoiding further aggravation to the pancreas through a high carbohydrate, low fat diet and discontinuing all alcohol consumption. Eating smaller but more frequent meals can help to alleviate symptoms. Often pancreatic enzyme pills are prescribed to help digest the food. Sometimes medication is prescribed for pain.

Understanding the Complexities of Pancreatitis: The Pancreas Center understands how frustrating a pancreatitis diagnosis can be, not only for the patient, but for the family as well. Our multi-disciplinary team works together to not only develop a course of treatment to manage the symptoms of this complicated disease but to be ready with a plan for treating future pancreatitis episodes.

To make an appointment with our pancreatic specialists, please call our Pancreas Center coordinators at 212.305.9467 or visit our website at www.pancreascenter.com.



Communication with patients is given top priority at The Pancreas Center. We believe in treating the whole person, not just the disease. This quest for achieving patient satisfaction and a quality patient experience leads to satisfied and cared-for patients and families.

Pancreatic Cyst Surveillance Program

The Pancreatic Cyst Surveillance Program is a unique program within the Pancreas Center that is dedicated to monitoring and treating pancreatic cysts before they are able to progress to cancer.

Pancreatic cysts are abnormal fluid-filled growths on or in the pancreas. There are several types of cysts: some types are benign, with virtually no likelihood of becoming cancerous, while other forms have up to a 70% chance of becoming cancerous. Because of the great variation and the risk associated with certain types, it is very important that all pancreatic cysts are detected, evaluated, monitored, and if necessary, removed.

The Pancreas Center established the Pancreatic Cyst Surveillance Program in order to ensure that patients are regularly monitored and that cysts receive proper preventive care. In particular, the program addresses a significant unmet need in the wider medical community, in which patients with pancreatic cysts tend not to receive the frequent, close monitoring that ideally would occur.

How the Pancreatic Cyst Surveillance Program Works

This clinic takes place once each month at the Pancreas Center. Our physicians examine each patient and review his or her records and scans, and take new images if needed. Once the cyst has been clearly identified, a treatment plan is determined.

In many cases, the plan of care entails follow-up monitoring every 6 or 12 months. In some cases, additional biopsies may be needed, which are performed by our gastroenterologists and interventional endoscopists. In these cases, treatment plans will depend on what the ultrasound and biopsy show. Our multidisciplinary team includes experts in every specialty related to management of pancreatic disease, so we are fully prepared to monitor and treat not just cysts but every pancreatic condition.

To make an appointment or for more information about the Pancreatic Cyst Surveillance Program, please call 212.305.9467

Autologous Islet Cell Transplantation

NewYork-Presbyterian/Columbia is the first center in the New York metropolitan area to offer autologous islet cell transplantation to prevent type 1 diabetes after pancreatectomy. Patients who need a total pancreatectomy for chronic pancreatitis or other benign diseases may be eligible for this procedure.

Preventing Diabetes after Pancreatectomy: Every year, about 87,000 people in the U.S. receive surgical treatment for pancreatitis. This surgery is performed in order to relieve the intractable pain that chronic pancreatitis causes in some people. The surgery effectively relieves patients' pain in 90% of cases, but without a pancreas to produce insulin, such patients are left with a difficult-to-treat form of type 1 diabetes known as brittle diabetes.

Autologous islet cell transplantation is a procedure in which the patient's islet cells are extracted from the pancreas, specially processed, and reinfused into his or her liver. When autologous islet transplantation is successful, the reinfused cells produce insulin, acting like a backup pancreas to regulate blood sugar. According to data available so far, about one third of patients require no insulin therapy after autologous islet transplantation. About one third of patients require some insulin after the procedure, and the procedure is unsuccessful in about one third.

Autologous islet cell transplantation is under continued investigation at NewYork-Presbyterian/ Columbia University Medical Center.



The Pancreas Center's approach is based on the understanding that identifying and treating individuals at the highest risk, prior to their developing symptoms, offers the greatest chance of success in the battle against pancreatic cancer.

The Muzzi Mirza Pancreatic Cancer Prevention & Genetics Program

The Muzzi Mirza Pancreatic Cancer Prevention & Genetics Program is a unique program within the Pancreas Center dedicated to prevention and early detection of pancreatic cancer. The program aims to identify and treat people at the highest risk of pancreatic cancer before they develop advanced disease. It was named in loving memory of Muzzafar “Muzzi” Mirza, a patient who succumbed to pancreatic cancer and wanted to provide others with the opportunity to receive diagnoses at earlier stages, when successful treatment is far more likely.

The Screening Program: The Muzzi Mirza Pancreatic Cancer Prevention & Genetics Program is available to any person who believes he or she may have a high risk of developing pancreatic cancer. Patients in the screening program receive the following services:

- Consultation with a genetic counselor to discuss your family history and construct your family tree
- Consultation with a physician to perform a physical exam and discuss family history
- Consultation with our prevention team to discuss your risk factors and answer questions
- Meeting with the team regarding your plan of care, which may include genetic testing, endoscopic ultrasound, and/or imaging for early detection, if appropriate. If screening tests are abnormal, patients may be referred to a Pancreas Center surgeon.
- Continued and close surveillance, with intervals based on your risk category.

Ideally, screening should begin approximately 10 years prior to the earliest age of onset of cancer in the family. Anyone concerned about their risk should call the center at 212.305.9337.

SURGICAL EXPERTISE

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Ancillary Services at the Pancreas Center

Medical Oncology: The Pancreas Center Medical Oncology Team administers chemotherapy treatment pre-operatively, post-operatively, and for primary treatment. We strive to have therapeutic treatments available for every stage of disease. The nurse practitioners who work with the medical oncologists provide support during treatment, including the management of any side effects from chemotherapy. The Basic Science Research Team works closely with our medical oncologists to develop alternative treatments that are both effective and safe to administer to patients.

For a list of up to date therapeutic clinical trials please visit our website at www.pancreascenter.com and click on Clinical Trials or call 212.305.9336.

Radiation Oncology: Radiation therapy, sometimes called radiotherapy, is a technique that uses high frequency X-rays to shrink or slow the growth of cancerous tumors. Our Radiation Oncology Department at Columbia University Medical Center/NewYork-Presbyterian Hospital has an ongoing commitment to incorporate the latest medical and technological advances to produce the best results for our patients.

Nutrition Services: Since many of our patients have nutrition related concerns, we have a clinical nutritionist on staff whose focus is treating patients with pancreatic cancer and chronic pancreatitis. This service is offered to you at no additional cost. We encourage you to make an appointment with our nutritionist by calling 212-305-5403.

Psychiatry & Social Work Services: The Pancreas Center has established a referral service for patients and their loved ones who would like to have a Columbia University psychiatrist address the common issues of adjustment and depression that many experience with extensive pancreatic diseases. Additionally, support groups and private counseling sessions for patients and families are available through our social work services. Social workers can also assist with insurance issues and provide referrals to national cancer support agencies.

The Pancreas Center

www.columbiasurgery.org

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