

Total Pancreatectomy with Islet Autotransplantation



Cincinnati Children's is ranked #4 in Gastroenterology & GI Surgery and third among all Honor Roll hospitals in the 2015–16 *U.S. News & World Report* listing of Best Children's Hospitals.

Cincinnati Children's Hospital Medical Center is one of only a few institutions in the United States offering total pancreatectomy with islet autotransplantation (TPIAT) for patients as young as five.

TPIAT may be recommended for patients with severe, debilitating pain caused by chronic or acute recurrent pancreatitis. The surgeon resects the pancreas en bloc with the duodenum and spleen, and reconstructs the gastrointestinal tract and bile duct. Islets are isolated from the pancreas, then injected through the portal vein into the liver. The primary goal of TPIAT is to provide pain relief and restore quality of life. The secondary goal is to autotransplant islets with the expectation that they will perform some essential functions of the pancreas, specifically blood glucose control.

HOW WE'RE DIFFERENT

- **Pediatric specialization** — Our pediatric specialists have years of experience in managing pancreatic disease and training to address each child's unique physiological, nutritional and psychosocial needs before, during and after TPIAT.
- **Partnership with University of Cincinnati** — Our capabilities are enhanced by our close working relationships with colleagues at the University of Cincinnati Medical Center, who were among the first to perform TPIAT in adolescents and adults. We utilize the fully accredited local islet isolation facility, established by UC.

CONDITIONS TREATED

- Chronic pancreatitis
- Acute recurrent pancreatitis

TREATMENT TEAM

SURGERY

Jaimie Nathan, MD

*Surgical Director,
Pancreas Care Center*

GASTROENTEROLOGY

Maisam Abu-El-Haija, MD

*Medical Director, Pancreas
Care Center*

Tom Lin, MD

*Associate Director,
Director of Endoscopy,
Pancreas Care Center*

Joseph Palermo, MD, PhD

*Associate Director,
Medical Director, TPIAT Program,
Pancreas Care Center*

ENDOCRINOLOGY

Deborah Elder, MD

PAIN MANAGEMENT

Kenneth Goldschneider, MD

John Rose, MD

Alexandra Szabova, MD

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TREATMENT APPROACH

Our multidisciplinary team provides intensive preoperative evaluation, inpatient care and postoperative follow-up. The comprehensive preoperative work-up includes radiologic testing, such as magnetic resonance imaging, and endoscopic procedures, such as endoscopic retrograde cholangiopancreatography (ERCP). Other tests evaluate pancreatic endocrine function (glucose tolerance testing, C-peptide levels, and glycosylated hemoglobin levels) and exocrine function (pancreatic function testing). Pain management specialists perform a thorough evaluation as well in order to provide comprehensive management of symptoms.

Following TPIAT, the total inpatient stay is usually about one month. Patients undergo intensive insulin therapy in the pediatric intensive care unit for about one week, in order to “rest” the islets, as hyperglycemia is detrimental to islet engraftment and function. Feeding via a gastrojejunal feeding tube is started during the first week as well. During the inpatient stay, advanced practice nurses and diabetes educators teach patients and families about blood glucose control, feeding tube management and other aspects of at-home care.

The weeks and months following surgery are critically important to long-term success. Patients are asked to remain in the area for about four to six weeks after they are discharged from the hospital. During that time, they return to the Pancreas Care Center for frequent follow-up appointments with pediatric specialists, who focus on blood glucose control and islet function, pancreatic enzyme replacement therapy, nutrition and feeding tube management, and weaning of pain medications. Our guest services team is available to assist families in planning for the temporary relocation needed for the procedure.

OUTCOMES AND OUTLOOK

Most patients report significant pain relief and an improvement in their quality of life following TPIAT. In the months following surgery, they typically can return to school, social activities and even sports.

Over 40 percent of children achieve insulin independence and are able to wean off all exogenous insulin by one year after TPIAT; another 30 percent achieve partial graft function and remain only on basal insulin doses. The remaining 30 percent of patients are fully insulin dependent, requiring both basal and bolus doses. If the islets fail and the patient experiences serious complications from diabetes over the long-term, a pancreas transplant or allogeneic islet transplant may be indicated.

Cincinnati Children’s participates in a national research consortium to better understand chronic pancreatitis and advance the understanding of TPIAT to improve patients’ quality of life.

**For urgent issues, or to speak with the specialist on call
24/7, call the Physician Priority Link at 1-888-987-7997.**