



# FEP Medical Policy Manual

## FEP 7.03.12 Islet Transplantation

**Effective Policy Date: January 1, 2023**

**Original Policy Date: September 2012**

### **Related Policies:**

7.03.02 - Allogeneic Pancreas Transplant

## Islet Transplantation

### Description

#### Description

Performed in conjunction with pancreatectomy for chronic pancreatitis, autologous islet transplantation is proposed to reduce the likelihood of insulin-dependent diabetes.

#### OBJECTIVE

The objective of this evidence review is to determine whether autologous pancreas islet transplantation improves the net health outcome in individuals with chronic pancreatitis.

#### POLICY STATEMENT

Autologous pancreas islet cell transplantation may be considered **medically necessary** as an adjunct to a total or near-total pancreatectomy only for individuals with chronic pancreatitis.

Autologous Islet transplantation is considered **investigational** in all other situations.

## POLICY GUIDELINES

None

## BENEFIT APPLICATION

Experimental or investigational procedures, treatments, drugs, or devices are not covered (See General Exclusion Section of brochure).

Refer to the brochure regarding Allogeneic Islet cell transplantation.

## FDA REGULATORY STATUS

The U.S. Food and Drug Administration (FDA) regulates human cells and tissues intended for implantation, transplantation, or infusion through the Center for Biologics Evaluation and Research, under Code of Federal Regulation Title 21, parts 1270 and 1271. Allogeneic islet cells are included in these regulations. No allogeneic islet cell product is currently approved in the United States, but a biologic license application is currently under consideration by the FDA, and the Cellular, Tissue and Gene Therapies Advisory Committee voted in favor of approving the product (donislecel, purified allogeneic deceased donor pancreatic islet cells) in April 2021.<sup>1,2</sup>

## RATIONALE

### Summary of Evidence

For individuals with chronic pancreatitis undergoing total or near-total pancreatectomy who receive autologous pancreas islet transplantation, the evidence includes nonrandomized studies and systematic reviews. Relevant outcomes are overall survival (OS), change in disease status, medication use, resource utilization, and treatment-related morbidity. Autologous islet transplants are performed in the context of total or near-total pancreatectomies to treat intractable pain from chronic pancreatitis. The procedure appears to decrease significantly the incidence of diabetes after total or near-total pancreatectomy in patients with chronic pancreatitis. Also, this islet procedure is not associated with serious complications and is performed in patients who are already undergoing a pancreatectomy procedure. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

## SUPPLEMENTAL INFORMATION

### Practice Guidelines and Position Statements

Guidelines or position statements will be considered for inclusion in 'Supplemental Information' if they were issued by, or jointly by, a US professional society, an international society with US representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

### National Institute for Health and Care Excellence

In 2008, NICE published guidance indicating the evidence on allogeneic pancreatic islet cell transplantation for type 1 diabetes has shown that serious procedure-related complications may occur, and the long-term immunosuppression required is associated with risk of adverse events.<sup>55</sup> A related 2008 guidance addressed autologous islet cell transplantation for improved glycemic control after pancreatectomy and stated that studies have shown "some short-term efficacy, although most patients require insulin therapy in the long term... complications result mainly from the major surgery involved in pancreatectomy (rather than from the islet cell transplantation)."<sup>56</sup>

## American Diabetes Association

In 2022, the American Diabetes Association standards of medical care recommended autologous islet cell transplantation be considered in patients undergoing total pancreatectomy for chronic pancreatitis to prevent postsurgical diabetes.<sup>57</sup> The standards of care note that islet cell transplantation may have a role in type 1 diabetes; however, it is considered experimental and improved blood glucose monitoring technology may be a better alternative.<sup>58</sup> Because of the need for immunosuppressive agents posttransplantation, the guideline notes that transplantation in type 1 diabetes should be reserved for patients also undergoing renal transplantation or experiencing recurrent ketoacidosis with severe hypoglycemia despite intensive management.

## International Consensus Guidelines for Chronic Pancreatitis

In 2020, the International Consensus Guidelines for Chronic Pancreatitis panel released a statement on the role of total pancreatectomy and islet transplant in patients with chronic pancreatitis.<sup>59</sup> The panel stated that islet transplant should be considered for patients undergoing total pancreatectomy due to the potential for insulin independence and better long-term glycemic outcomes compared to pancreatectomy alone (weak recommendation based on low quality evidence). However, there is not enough information to definitively conclude when transplant should be performed relative to other interventions. Major indications for pancreatectomy with islet transplant include debilitating pain or recurrent pancreatitis episodes that diminish quality of life (strong recommendation based on low quality evidence). Contraindications to pancreatectomy with islet transplant include active alcoholism, pancreatic cancer, end-stage systemic illness, or psychiatric illness or socioeconomic status that would hinder either the procedure itself or posttransplant care (strong recommendation based on low quality evidence). Pancreatectomy with islet transplant improves quality of life, opioid use, and pancreatic pain in this population, but evidence about the effect on healthcare utilization is limited.

## U.S. Preventive Services Task Force Recommendations

Not applicable.

## Medicare National Coverage

Medicare covers pancreatic islet transplantation in patients with type 1 diabetes participating in a clinical trial sponsored by the National Institutes of Health.<sup>60</sup> Partial pancreatic tissue transplantation or islet transplantation performed outside a clinical trial are not covered.

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**POLICY HISTORY - THIS POLICY WAS APPROVED BY THE FEP® PHARMACY AND MEDICAL POLICY COMMITTEE ACCORDING TO THE HISTORY BELOW:**

<b>Date</b>	<b>Action</b>	<b>Description</b>
September 2012	New policy	
March 2013	Replace policy	Policy updated with literature review; policy statement unchanged.
September 2013	Replace policy	Policy updated with literature review; references added; policy statements unchanged.
September 2014	Replace policy	Policy updated with literature review. Reference 4 added. No change in policy statement.
September 2015	Replace policy	Policy updated with literature review; references 1, 3, 6, and 11 added. Policy statements unchanged.
December 2017	Replace policy	Policy updated with literature review through June 22, 2017; Policy statements unchanged.
December 2018	Replace policy	Policy updated with literature review through June 21, 2018; references 1 and 10 added. Policy statements unchanged.
December 2019	Replace policy	Policy updated with literature review through June 10, 2019; no references added, some references removed. Policy statements unchanged.
December 2020	Replace policy	Policy updated with literature review through June 9, 2020; references added. Policy statements unchanged.
December 2021	Replace policy	Policy updated with literature review through June 22, 2021; references added. Policy statements unchanged.
December 2022	Replace policy	Policy updated with literature review through June 17, 2022; references added. Minor editorial refinements to policy statement; intent unchanged.

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