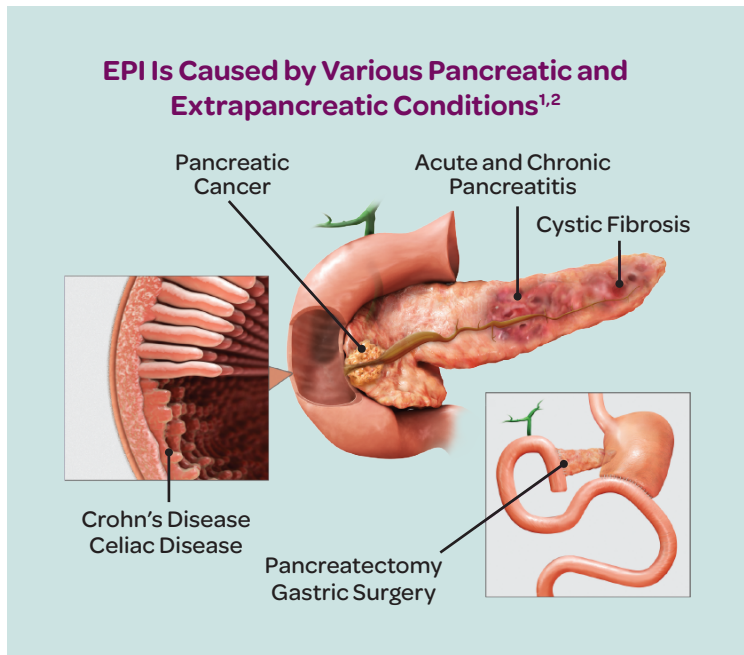


When to Consider the Pancreas

Gastrointestinal upset? Nutritional deficiencies? It could be EPI.

Exocrine Pancreatic Insufficiency (EPI) Causes Decreased Production, Delivery, or Activity of Pancreatic Enzymes Needed for Proper Digestion



EPI Signs and Symptoms^{1,2}

- Flatulence
- Bloating
- Abdominal discomfort
- Fatty food intolerance
- Diarrhea
- Malodorous stool
- Steatorrhea

EPI Can Have Nutritional Consequences and Impact Quality of Life^{1,2}

- Micronutrient and fat-soluble vitamin deficiencies
- Malnutrition
- Weight loss

Observed in Patients With Chronic Pancreatitis^{3,4}

- Impaired quality of life
- Increased mortality

EPI Is Largely a Clinical Diagnosis

Considerations in the diagnosis of EPI

<p>Presence of EPI-Predisposing Condition⁵⁻⁹</p>	<ul style="list-style-type: none"> • Acute pancreatitis • Celiac disease • Chronic pancreatitis • Cystic fibrosis 	<ul style="list-style-type: none"> • Inflammatory bowel disease • Pancreatic/gastric surgery • Pancreatic cancer • Type 1 diabetes 	<ul style="list-style-type: none"> • Type 2 diabetes
<p>Signs and Symptoms^{5,6}</p>	<ul style="list-style-type: none"> • Abdominal discomfort • Bloating • Diarrhea • Flatulence 	<ul style="list-style-type: none"> • Fat soluble vitamin deficiencies • Fatty food intolerance • Malnutrition 	<ul style="list-style-type: none"> • Malodorous stool • Micronutrient deficiencies • Steatorrhea • Weight loss
<p>Supplemental Tests^{5,6}</p>	<ul style="list-style-type: none"> • Biochemical markers of nutritional status • Direct pancreatic function test • Fecal elastase-1 test • Fecal fat tests 		
<p>Patient Factors That May Delay Diagnosis^{10,11}</p>	<ul style="list-style-type: none"> • Accustomed to symptoms • Embarrassment • Restricting fat intake to avoid symptoms 		

When to Consider the Pancreas

Gastrointestinal upset? Nutritional deficiencies? It could be EPI.

PERT Is the Cornerstone of EPI Treatment

Pancreatic enzyme replacement therapy (PERT) is a combination of porcine-derived lipases, proteases, and amylases to aid digestion.^{5,12}

PERT dosing options are based on:



Patient weight

or



Fat content of the diet

Dose should be individualized based on:

- ✓ Clinical symptoms
- ✓ Fat content of the diet
- ✓ Degree of steatorrhea

If signs and symptoms of malabsorption persist, increase the dosage.

General Safety



To avoid irritation of oral mucosa, patients should not chew PERT or retain in the mouth¹²



Exercise caution when prescribing PERT to patients with gout, renal impairment, or hyperuricemia¹²



Exercise caution when administering pancrelipase to a patient with a known allergy to proteins of porcine origin¹²



Fibrosing colonopathy has been reported in patients with cystic fibrosis taking high-dose PERT²

References:

1. Domínguez-Muñoz JE. *Curr Gastroenterol Rep.* 2007;9(2):116-122. 2. Lindkvist B. *World J Gastroenterol.* 2013;19(42):7258-7266. 3. Oleson SS et al. *Pancreatology.* 2014;14(6):497-502. 4. de la Iglesia-García D et al. *J Clin Gastroenterol.* 2018;52(8):e63-e72. 5. Othman MO et al. *Int J Clin Pract.* 2018;72(2). 6. Durie P et al. *Curr Med Res Opin.* 2018;34(1):25-33. 7. Mohapatra S et al. *Pancreas.* 2016;45(8):1104-1110. 8. Zhang J et al. *Int J Endocrinol.* 2022;2022:7764963. 9. Sikkens ECM et al. *J Clin Gastroenterol.* 2014;48(5):e43-e46. 10. Hart PA et al. *Curr Treat Options Gastroenterol.* 2015;13(3):347-353. 11. American Gastroenterological Association website. http://www.gastro.org/press_releases/largest-analysis-examining-barriers-to-epi-diagnosis-finds-patients-with-digestive-health-issues-overlook-their-symptoms. Accessed January 23, 2023. 12. Drugs@FDA: FDA-Approved drugs. US Drug & Food Administration. Accessed September 5, 2024. <https://www.fda.gov/drugs>