

# LOOK EARLY and LOOK AGAIN for EPI

Keep Exocrine Pancreatic Insufficiency (EPI) in your differential diagnosis for patients who present with one or more of the following GI symptoms.<sup>1,2</sup>

## Look for symptoms and underlying conditions or procedures

- Suspect EPI in patients who present with 1 or more symptoms, even if previously diagnosed with another GI condition<sup>2-4</sup>

## Get the details

- Signs and symptoms are not always evident<sup>4</sup>
  - Patients may limit fat ingestion
  - Dietary history is important

## Tests can help confirm a diagnosis

- Fecal elastase-1 test: a single stool sample collection<sup>5,6</sup>
- A fecal elastase value of <200 µg/g of stool is considered abnormal<sup>6</sup>

## One or more symptoms could mean EPI<sup>2</sup>



Diarrhea



Abdominal pain



Bloating



Flatulence



Unexplained weight loss



Steatorrhea\*

\*Steatorrhea: ≥7 g of fecal fat per day while consuming 100 g of dietary fat per day in a 72-hour stool test.<sup>1</sup>

## EPI symptoms may be similar to those of other GI conditions<sup>6</sup>

	EPI <sup>2</sup>	IBS-D <sup>7,8</sup>	SIBO <sup>9</sup>	IBD <sup>10-13</sup>	Celiac disease <sup>14</sup>
Diarrhea	●	●	●	●	●
Abdominal pain	●	●	●	●	●
Bloating	●	●	●	●	●
Flatulence	●	●	●	●	●

This chart is for discussion purposes only. This list is not a complete list of symptoms, and it is not intended to be used to diagnose, treat, or care for any particular patient.

IBD=inflammatory bowel disease; IBS-D=irritable bowel syndrome with diarrhea; SIBO=small intestinal bacterial overgrowth.

- With EPI, postprandial onset of symptoms is due to inadequate production, delivery, or activity of digestive enzymes<sup>15,16</sup>
- Understanding the timing of symptom onset, as well as other presenting clinical features, may help distinguish EPI from other conditions<sup>12</sup>

# EVALUATE CLINICAL FEATURES TO HELP DISTINGUISH EPI FROM OTHER GI CONDITIONS

Overlapping symptoms of other GI conditions can make it difficult to get to an EPI diagnosis.<sup>6</sup> Therefore, it's important to assess clinical features, such as symptom onset and stool quality, in addition to symptom presentation.

	EPI <sup>12,17,18</sup>	IBS-D <sup>7,12,19</sup>	SIBO <sup>9,12</sup>	IBD <sup>10-12</sup>	Celiac disease <sup>12,14</sup>
Symptom onset related to food intake	●		Foods high in sugar and fiber	●*	Triggered by gluten
Nocturnal symptoms		Improves at night		●†	
Stool quality	Fatty; may not be very loose	Watery	Fatty	Bloody/purulent	Watery/fatty
Urgency	●	●		●‡	
Fecal incontinence		●		●	
Unexplained weight loss	●		In extreme cases	●	●

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## Significance of fatty stools

With EPI, the inability to properly digest fats may cause stools to appear greasy or smell foul due to too much fat in stools.<sup>2,4</sup> **This is known as steatorrhea, a symptom that may not appear until 90% of exocrine pancreatic function is compromised.<sup>2</sup>**

- As a result of inadequate enzyme output or activity, EPI leads to maldigestion and malabsorption, which leads to malnutrition and malnutrition-related complications.<sup>3,4,16</sup>

Code directly for EPI using ICD-10 code **K86.81**<sup>20</sup>



Because EPI is largely a clinical diagnosis, having an open conversation with your patients about their symptoms can help you reach a diagnosis sooner.<sup>1</sup>

Learn more at [identifyEPI.com/PRO](https://identifyEPI.com/PRO)

**References:** 1. Fiekler A, Philpott J, Armand M. Enzyme replacement therapy for pancreatic insufficiency: present and future. *Clin Exp Gastroenterol*. 2011;4:55-73. 2. Alkaade S, Vareedavah AA. A primer on exocrine pancreatic insufficiency, fat malabsorption, and fatty acid abnormalities. *Am J Manag Care*. 2017;23(suppl 12):S203-S209. 3. Ferrone M, Raimondo M, Scolapio JS. Pancreatic enzyme pharmacotherapy. *Pharmacotherapy*. 2007;27(6):910-920. 4. Dominguez-Munoz JE. Pancreatic enzyme therapy for pancreatic exocrine insufficiency. *Curr Gastroenterol Rep*. 2007;9(2):116-122. 5. Chowdhury RS, Forsmark CE. Review article: pancreatic function testing. *Aliment Pharmacol Ther*. 2003;17(6):733-750. 6. Leeds JS, Oppong K, Sanders DS. The role of fecal elastase-1 in detecting exocrine pancreatic disease. *Nat Rev Gastroenterol Hepatol*. 2011;8(7):405-415. 7. Lacy BE, Pimentel M, Brenner DM, et al. ACG clinical guidelines: management of irritable bowel syndrome. *Am J Gastroenterol*. 2021;116(1):17-44. 8. Owyang C. Irritable bowel syndrome. In: Longo DL, Fauci AS, Kasper DL, Hauser SL, Jameson JL, Loscalzo J, eds. *Harrison's Principles of Internal Medicine*. 20th ed. McGraw Hill; 2018:2496-2502. 9. Pimentel M, Saad RJ, Long MD, Rao SSC. ACG clinical guideline: small intestinal bacterial overgrowth. *Am J Gastroenterol*. 2020;115(2):165-178. 10. Gu P, Kuenzig ME, Kaplan GG, Pimentel M, Rezaie A. Fecal incontinence in inflammatory bowel disease: a systematic review and meta-analysis. *Inflamm Bowel Dis*. 2018;24(6):1280-1290. 11. Rubin DT, Ananthakrishnan AN, Siegel CA, Sauer BG, Long MD. ACG clinical guideline: ulcerative colitis in adults. *Am J Gastroenterol*. 2019;114(3):384-413. 12. Burgers K, Lindberg B, Bevis ZJ. Chronic diarrhea in adults: evaluation and differential diagnosis. *Am Fam Physician*. 2020;101(8):472-480. 13. Farrell D, McCarthy G, Savage E. Self-reported symptom burden in individuals with inflammatory bowel disease. *J Crohns Colitis*. 2016;10(3):315-322. 14. Rubio-Tapia A, Hill ID, Kelly CP, Calderwood AH, Murray JA; American College of Gastroenterology. ACG clinical guidelines: diagnosis and management of celiac disease. *Am J Gastroenterol*. 2013;108(5):656-676. 15. Durie P, Baillargeon JD, Bouchard S, Donnellan F, Zepeda-Gomez S, Teshima C. Diagnosis and management of pancreatic exocrine insufficiency (PEI) in primary care: consensus guidance of a Canadian expert panel. *Curr Med Res Opin*. 2018;34(1):25-33. 16. Lindkvist B. Diagnosis and treatment of pancreatic exocrine insufficiency. *World J Gastroenterol*. 2013;19(42):7258-7266. 17. Phillips ME, Hopper AD, Leeds JS, et al. Consensus for the management of pancreatic exocrine insufficiency: UK practical guidelines. *BMJ Open Gastroenterol*. 2021;8(1):e000643. 18. Johnson CD, Williamson N, Janssen-van Solingen G, et al. Psychometric evaluation of a patient-reported outcome measure in pancreatic exocrine insufficiency (PEI). *Pancreatol*. 2019;19(1):182-190. 19. Simrén M, Patsson OS, Heymen S, Bajor A, Törnblom H, Whitehead WE. Fecal incontinence in irritable bowel syndrome: prevalence and associated factors in Swedish and American patients. *Neurogastroenterol Motil*. 2017;29(2):10.1111/nmo.12919. 20. Centers for Disease Control and Prevention. National Center for Health Statistics – ICD-10-CM. Accessed May 2, 2023. <https://icd10cmtool.cdc.gov/?fy=FY2022&query=exocrine>