Test Definition: POU_F

Phosphorus, Feces

Overview

Useful For

Workup of cases of chronic diarrhea

Identifying the use of phosphate-containing laxatives contributing to osmotic diarrhea

Method Name

Photometric, Ammonium Molybdate

NY State Available

Yes

Specimen

Specimen Type

Fecal

Ordering Guidance

This test is **only** clinically valid if performed on watery specimens. In the event a formed fecal specimen is submitted, the test will not be performed.

Specimen Required

Patient Preparation: No barium, laxatives, or enemas may be used for 96 hours prior to start of, or during, collection.
Supplies: Stool containers - 24, 48, 72 Hour Kit (T291)
Container/Tube: Stool container
Specimen Volume: 10 g
Collection Instructions: Collect a very liquid stool specimen.

Specimen Minimum Volume

5 g

Reject Due To

All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Fecal	Frozen (preferred)	14 days	
	Ambient	48 hours	
	Refrigerated	7 days	

Clinical & Interpretive

Clinical Information

The concentration of electrolytes in fecal water and their rate of excretion are dependent upon 3 factors:
-Normal daily dietary intake of electrolytes
-Passive transport from serum and other vascular spaces to equilibrate fecal osmotic pressure with vascular osmotic pressure
-Electrolyte transport into fecal water due to exogenous substances and rare toxins (eg, cholera toxin)

Fecal osmolality is normally in equilibrium with vascular osmolality, and sodium is the major effector of this equilibrium. Fecal osmolality is normally 2 x (sodium + potassium) unless there are exogenous factors inducing a change in composition, such as the presence of other osmotic agents (magnesium sulfate, saccharides) or drugs inducing secretions, such as phenolphthalein or bisacodyl. Osmotic diarrhea is caused by ingestion of poorly absorbed ions or sugars.(1) There are multiple potential causes of osmotic diarrhea. Measurement of phosphate and/or magnesium in liquid stool can assist in identifying intentional or inadvertent use of magnesium and/or phosphate-containing laxatives as the cause.(2-4) The other causes of osmotic diarrhea include ingestion of osmotic agents such as sorbitol or polyethylene glycol laxatives, or carbohydrate malabsorption due most commonly to lactose intolerance. Carbohydrate malabsorption can be differentiated from other osmotic causes by a low stool pH (<6).(5,6)

Non-osmotic causes of diarrhea include bile acid malabsorption, inflammatory bowel disease, endocrine tumors, and neoplasia.(1) Secretory diarrhea is classified as non-osmotic and is caused by disruption of epithelial electrolyte transport when secretory agents such as anthraquinones, phenolphthalein, bisacodyl, or cholera toxin are present. The fecal fluid usually has elevated electrolytes (primarily sodium and chloride) and a low osmotic gap (<50 mOsm/kg). Infection is a common secretory process; however, it does not typically cause chronic diarrhea (defined as symptoms >4 weeks).

Reference Values

An interpretive report will be provided

Interpretation

Phosphorus elevation above 102 mg/dL is suggestive of phosphate-induced diarrhea.(4)

Cautions

Phospholipids contained in liposomal drug formulations (eg AmBisome) may be hydrolyzed in the test due to the acidic reaction pH and thus lead to elevated phosphate results.(1,2)

In very rare cases, gammopathy, in particular type IgM (Waldenstrom macroglobulinemia), may cause unreliable results.

Clinical Reference

1. Steffer KJ, Santa Ana CA, Cole JA, Fordtran JS: The practical value of comprehensive stool analysis in detecting the cause of idiopathic chronic diarrhea. Gastroenterol Clin North Am. 2012;41:539-560
2. Ho J, Moyer TP, Phillips SF: Chronic diarrhea: the role of magnesium. Mayo Clin Proc. 1995;70:1091-1092
3. Fine KD, Santa Ana CA, Fordtran JS: Diagnosis of magnesium-induced diarrhea. N Engl J Med. 1991;324:1012-1017
4. Fine KD, Ogunji F, Florio R, Porter J, Ana CS: Investigation and diagnosis of diarrhea caused by sodium phosphate. Dig

Dis Sci. 1998;43(12):2708-2714
5. Eherer AJ, Fordtran JS: Fecal osmotic gap and pH in experimental diarrhea of various causes. Gastroenterology. 1992;103:545-551
6. Casprary WF: Diarrhea associated with carbohydrate malabsorption. Clin Gastroenterol. 1986;15:631-655

Performance

Method Description
In the presence of sulfuric acid, inorganic phosphate and ammonium molybdate form an ammonium phosphomolybdate complex. The concentration of phosphomolybdate formed is measured photometrically and is directly proportional to the inorganic phosphate concentration.(Package insert: Roche Phosphorus reagent. Roche Diagnostics; V9.0 12/2019)

PDF Report
No

Day(s) Performed
Monday, Thursday

Report Available
1 to 3 days

Specimen Retention Time
7 days

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Main Campus

Fees & Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification
This test has been modified from the manufacturer's instructions. Its performance characteristics were determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information
84100

Test Definition: POU_F

Phosphorus, Feces

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
POU_F	Phosphorus, F	88713-3

Result ID	Test Result Name	Result LOINC® Value
POU_F	Phosphorus, F	88713-3