Question 23 – January 7

A 56-year-old man undergoes a surgical procedure for a benign pancreatic mass resulting on removal of > 90% of his pancreas. Several months later he complains of ongoing foul-smelling diarrhea which occurs after eating. A 72-hour fecal fat and fecal elastase are sent on a high fat diet.

What would you expect to find and why?

A. Fecal fat 26 g/day (high), fecal elastase 550 ug/g (normal)
B. Fecal fat 4 g/day (normal), fecal elastase 45 ug/g (low)
C. Fecal fat 26 g/day (high), fecal elastase 45 ug/g (low)
D. Fecal fat 4 g/day (normal), fecal elastase 550 ug/g (normal)

Answer: C
The fecal fat should be elevated due to decreased pancreatic enzymes. Common thinking is that when less than 10% of the pancreatic enzymatic activity is preserved (i.e. less than 10% of normal pancreatic enzymes are available in the small bowel lumen), fat malabsorption typically occurs. Laboratory features of fat malabsorption due to pancreatic insufficiency include a high fecal fat level (as long as there is enough fat consumed, typically at least 70-100 g of fat per day) and a low elastase in the stool. Typically pancreatic enzymes do not contain elastase, so you can assess for pancreatic exocrine insufficiency using fecal elastase even if patients are taking pancreatic enzyme replacement therapy.