

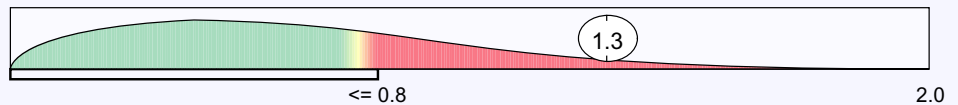


Patient: \_\_\_\_\_ Order Number: \_\_\_\_\_  
Age: 38 Completed: \_\_\_\_\_  
Sex: F Received: \_\_\_\_\_  
MRN: \_\_\_\_\_ Collected: \_\_\_\_\_

### Intestinal Permeability

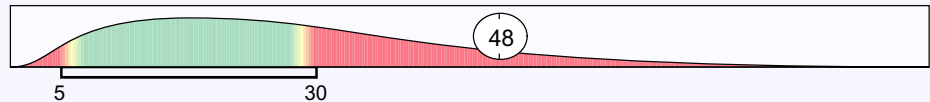
#### Lactulose Percent Recovery

Ref Range  
%



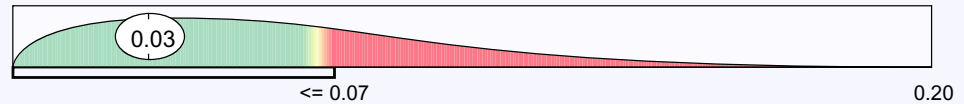
#### Mannitol Percent Recovery

Ref Range  
%



#### Lactulose/Mannitol Ratio

Ref Range



This test has been developed and its performance characteristics determined by GSDL, Inc. It has not been cleared or approved by the U.S. Food and Drug Administration.

### Commentary

Results are dependent on renal function. The mannitol determination has been corrected for concentration variability in the pre and post challenge urine collections by determining the creatinine concentrations and relating these to the mannitol determinations. In circumstances of significant renal insufficiency with low urinary creatinine concentrations in both the pre and post urine specimens, corrections for mannitol concentration variability using creatinine determinations cannot be done.

Lactulose and mannitol recoveries are elevated, suggesting an overall increase in permeability both between and through the intestinal epithelial cells. The elevated lactulose reflects increased paracellular permeability (between the cells), which can result in macromolecules, toxins and antigens crossing the intestinal barrier into the lymph and circulatory systems, a condition termed "leaky gut". These particles increase the load on the body's detoxification system and may stimulate immune reactivity. Increased lactulose recovery has been associated with food allergy, inflammatory bowel disease, arthritis and other inflammatory conditions.

The elevated mannitol reflects increased transcellular permeability (through the cells) which may result in the passage of small antigens across the mucosal barrier, thereby triggering an immune response.