

# ibs•smart® Test Interpretation Guide

Anti-CdtB	Anti-Vinculin	Test Result	Clinical Association
Elevated	Not Elevated	Positive	<ul style="list-style-type: none"> <li>A potentially <b>recent case of gastroenteritis</b> has likely led to IBS, and the patient may be more susceptible to subsequent gastroenteritis.</li> <li>Although the patient's <b>immune system has responded</b> to the CdtB toxin, <b>autoimmunity is not currently present</b>, as anti-vinculin antibodies are not elevated.</li> <li>Anti-CdtB levels could remain elevated and begin to generate anti-vinculin autoimmunity in time. Anti-CdtB antibody levels have been seen to return to normal over time.</li> </ul>
Not Elevated	Elevated	Positive	<ul style="list-style-type: none"> <li><b>Gastroenteritis has likely led to IBS.</b> The lack of elevation in anti-CdtB antibodies suggests that the gastroenteritis was less recent. The patient may still be more susceptible to subsequent gastroenteritis.</li> <li><b>Autoimmunity that damages gut function</b> has now developed, and an altered microbiome may be seen. The higher the level of anti-vinculin, the greater the risk of more severe dysmotility.</li> <li>Levels of anti-vinculin have been shown to become elevated over three to four months after infection and can be <b>more persistent</b> than levels of anti-CdtB.</li> </ul>
Elevated	Elevated	Positive	<ul style="list-style-type: none"> <li><b>A recent case of gastroenteritis</b> has likely led to IBS, or a recent infection subsequent to the development of IBS may have taken place.</li> <li><b>Autoimmunity has already developed</b>, damaging gut function, and an altered microbiome may be seen. The higher the level of anti-vinculin, the greater the risk of more severe dysmotility.</li> <li>Levels of anti-vinculin have been shown to become elevated over three to four months after infection and can be <b>more persistent</b> than levels of anti-CdtB.</li> <li>Levels of anti-CdtB have been seen to return to normal over time.</li> </ul>
Not Elevated	Not Elevated	Non-Indicative	<ul style="list-style-type: none"> <li>Patient may not have <b>post-infectious IBS</b>.</li> <li>Patient may be a candidate for <b>additional testing</b> to determine the cause of symptoms.</li> </ul>

1. Morales W. et al. Immunization with cytolethal distending toxin B produces autoantibodies to vinculin and small bowel bacterial changes in a rat model of postinfectious irritable bowel syndrome. *Neurogastroenterol Motil.* (2020).

2. Pimentel, M. et al. Microbiome and Its Role in Irritable Bowel Syndrome. *Dig Dis Sci* (2020).

3. Morales, W. et al. Second-Generation Biomarker Testing for Irritable Bowel Syndrome Using Plasma Anti-CdtB and Anti-Vinculin Levels. *Dig Dis Sci* (2019).

4. Klem F, et al. Prevalence, Risk Factors, and Outcomes of Irritable Bowel Syndrome After Infectious Enteritis: A Systematic Review and Meta-analysis. *Gastroenterology* (2017).

5. Rezaie, A. et al. Autoimmunity as a Potential Cause of Post-Infectious Dysmotility: A Longitudinal Observation. *American College of Gastroenterology* (2017).

6. Pimentel M. et al. Development and Validation of a Biomarker for Diarrhea-Predominant Irritable Bowel Syndrome in Human Subjects. *PLoS ONE* (2015).

