

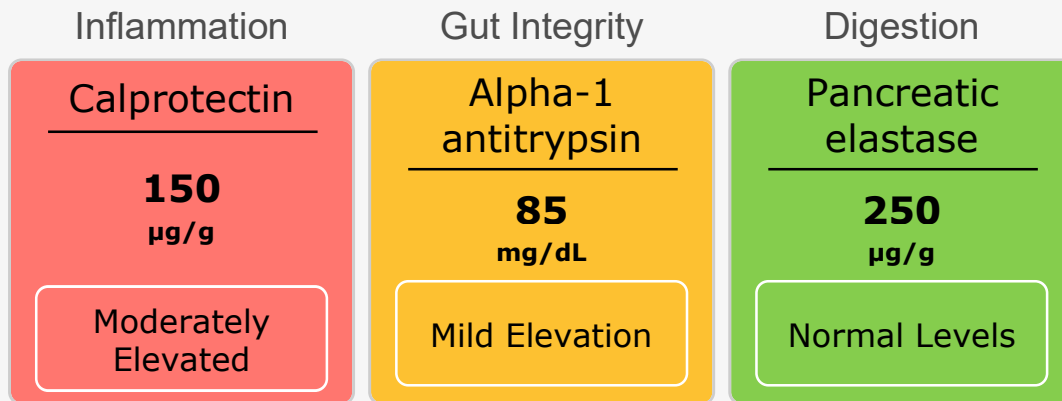
PATIENT DETAILS				CLINIC DETAILS	
<b>PATIENT NAME:</b>	Patient Four			<b>Practice One</b>	
<b>PATIENT ID:</b>	P000019	<b>SAMPLE DATE:</b>	18/06/2025	Eden Research Park, Littleport, CAMBRIDGESHIRE CB6 1SE	
<b>PATIENT DOB:</b>	07/09/1962	<b>SAMPLE TIME:</b>			
<b>ORDER ID:</b>	INV00098	<b>RECEIVED DATE:</b>	18/06/2025		
<b>TEST ID:</b>	T000138	<b>REPORT DATE:</b>			

# Gut Detective

# Gut Biomarker Profile



## Gut Biomarkers - Overview



### **Calprotectin Levels: Moderately Elevated 100-200 µg/g**

Possible IBD, infection, or chronic inflammation. Repeat testing and further evaluation needed.

- Possible early-stage IBD or ongoing infection.
- Could also indicate coeliac disease, diverticulitis, or microscopic colitis.
- Repeat test and clinical correlation needed.

### **Alpha-1 Antitrypsin Levels: Mildly Elevated 25-100 mg/dL**

Increased gut permeability, early-stage Protein-losing enteropathy (PLE), or mild inflammation.

- Early inflammatory bowel disease (IBD), food sensitivities, mild dysbiosis, stress-induced permeability.

### **Pancreatic Elastase Levels: Normal Pancreatic Function > 200 µg/g**

No evidence of pancreatic insufficiency.

- If symptoms persist, consider other causes of malabsorption (e.g., coeliac disease, SIBO, bile acid malabsorption).

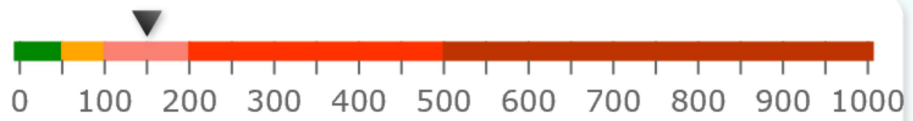
### Gut Biomarkers

Calprotectin

**150.0**

**µg/g** ↑

NORMAL RANGE  
< 50

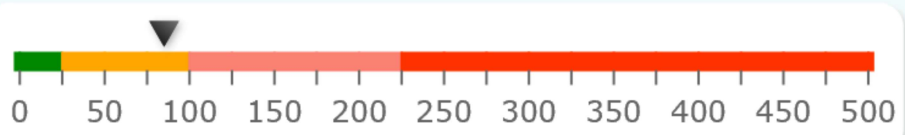


α1-antitrypsin

**85.0**

**mg/dL** ↑

NORMAL RANGE  
< 25

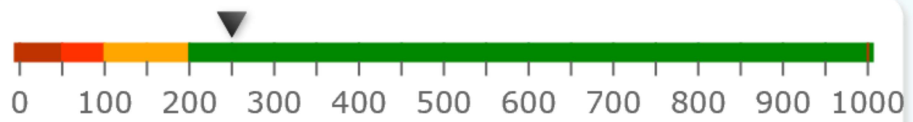


Pancreatic Elastase

**250.0**

**µg/g**

NORMAL RANGE  
> 200



## Gut Biomarkers - Calprotectin

### Calprotectin

150.0

µg/g ↑

NORMAL RANGE  
< 50

Calprotectin is a protein found in white blood cells, specifically neutrophils. It's released when these cells migrate to areas of inflammation, particularly in the intestines. Testing for calprotectin in stool samples provides a non-invasive way to assess intestinal inflammation and is commonly used in the diagnosis and management of gastrointestinal conditions, especially those involving chronic inflammation, such as inflammatory bowel disease (IBD).

#### Key Points About Calprotectin and Stool Testing:

**1. Indicator of Intestinal Inflammation:** Elevated levels of calprotectin in stool reflect active inflammation in the gastrointestinal tract, which can help distinguish between inflammatory disorders (like Crohn's disease and ulcerative colitis) and non-inflammatory conditions (such as irritable bowel syndrome, or IBS). This is particularly valuable because it reduces the need for invasive procedures like colonoscopies in certain situations.

**2. Monitoring Disease Activity:** For patients with established IBD, monitoring calprotectin levels can provide insight into the effectiveness of treatment and whether the disease is in remission or experiencing a flare. Regular testing helps to detect subclinical inflammation before symptoms worsen.

**3. Guiding Diagnostic Decisions:** High levels of calprotectin in patients with gastrointestinal symptoms often indicate the need for further diagnostic investigations, such as endoscopy or imaging, to confirm a diagnosis. Conversely, low levels may reassure both patients and clinicians that inflammatory pathology is unlikely.

**4. Predicting Relapse:** In IBD, elevated calprotectin levels can often predict an impending relapse even before clinical symptoms appear. This allows for early intervention, which may help prevent severe flare-ups.

Overall, calprotectin stool testing is a valuable tool in diagnosing, monitoring, and managing gastrointestinal inflammatory conditions, offering both patient and clinical benefits by reducing invasive testing and guiding timely therapeutic interventions.

## Gut Biomarkers - $\alpha$ 1-antitrypsin

$\alpha$ 1-antitrypsin

85.0

mg/dL ↑

NORMAL RANGE

< 25

Alpha-1 antitrypsin (AAT) is a protein primarily produced by the liver. In functional and integrative medicine, AAT testing in stool offers valuable insights into gut health, particularly in assessing inflammation, permeability, and potential protein loss.

### 1. Assessing Gut Barrier Integrity and Inflammation

- **Mucosal Health:** Elevated stool AAT suggests an impaired gut barrier, which is often seen in conditions with increased intestinal permeability or “leaky gut.” When the intestinal lining becomes more permeable, larger molecules like AAT can leak into the gut lumen and appear in stool. This can be triggered by chronic inflammation, infection, or autoimmune responses within the gut.

- **Chronic GI Conditions:** In inflammatory bowel disease (IBD), like Crohn's disease and ulcerative colitis, elevated stool AAT reflects active inflammation and mucosal damage. Monitoring AAT levels can thus help assess inflammation over time, guiding interventions to reduce mucosal damage.

### 2. Evaluating Functional Digestive Issues

- **Food Sensitivities:** Chronic low-grade inflammation and gut permeability, sometimes seen in IgG-mediated food sensitivities, may show elevated AAT. This can be relevant for practitioners focusing on dietary interventions, as an elevated stool AAT could prompt a closer look at food sensitivities, microbiome health, and other factors contributing to gut permeability.

- **IBS and Functional Dyspepsia:** While more commonly associated with IBD, some studies have shown that individuals with irritable bowel syndrome (IBS) or functional dyspepsia might also have low-grade mucosal permeability. Elevated stool AAT could add another piece to the puzzle when evaluating these functional conditions, especially if other markers like fecal calprotectin or lactoferrin remain normal.

### Summary

Stool AAT is particularly valuable for understanding the health and integrity of the GI mucosa. It aids in detecting early-stage inflammation, protein loss, and subtle shifts in gut permeability, making it a helpful tool for personalized and preventive care in functional medicine. For patients with chronic or unexplained GI symptoms, stool AAT testing can support a more targeted approach, enhancing long-term gut health strategies.

## Gut Biomarkers - Pancreatic Elastase

### Pancreatic Elastase

**250.0**

**µg/g**

NORMAL RANGE  
> 200

Pancreatic elastase is a proteolytic enzyme produced by the pancreas, specifically by acinar cells, and released into the small intestine where it aids in the breakdown of proteins. It is a robust marker of pancreatic function because it remains stable during its transit through the gastrointestinal (GI) tract, unlike some other pancreatic enzymes that may be degraded. Measuring pancreatic elastase in stool samples can provide a reliable assessment of exocrine pancreatic function.

#### Testing for pancreatic elastase is valuable for several reasons:

- 1. Assessing Pancreatic Function:** Low levels of pancreatic elastase in stool can indicate exocrine pancreatic insufficiency (EPI), a condition where the pancreas does not produce enough digestive enzymes, leading to malabsorption and nutritional deficiencies. EPI is commonly seen in conditions such as chronic pancreatitis, cystic fibrosis, and certain forms of diabetes.
- 2. Non-Invasive and Reliable:** The stool test for pancreatic elastase is non-invasive and is generally more stable and reliable than direct pancreatic stimulation tests, which can be invasive and uncomfortable.
- 3. Guiding Treatment:** Results from a pancreatic elastase test can inform treatment decisions, such as the need for pancreatic enzyme replacement therapy (PERT) to help improve digestion and absorption, which is critical for patients with EPI.
- 4. Monitoring Therapy:** For patients already on PERT, periodic testing can help assess whether enzyme supplementation is effective or if adjustments are necessary.
- 5. Broad Clinical Applications:** Testing for pancreatic elastase is useful not only for diagnosing and managing EPI but also for providing insights into digestive health in conditions associated with GI symptoms, malabsorption, and nutritional deficiencies.

In sum, pancreatic elastase testing is a practical tool for assessing pancreatic function and managing conditions that affect digestion and nutrient absorption, particularly in cases where exocrine function is compromised.