



CLINICAL CASE STUDY

# Microbiome-Guided Integrative Care Resolves Chronic Bloating, Constipation, and Food Sensitivities in Fibromyalgia

For Healthcare Professionals Only

## Introduction

To demonstrate the clinical utility of Microbiome Explorer™ and how it can be effectively integrated into practice, real-world case scenarios have been documented to illustrate its application and care. Below is a case managed by Dr Brad Leech, Clinical Nutritionist, showcasing the clinical work-up and the use of Microbiome Explorer™ in guiding patient management.

## Clinical Background: Fibromyalgia with Chronic GI Symptoms

Fibromyalgia is a complex, multisystem condition characterised by widespread pain, fatigue, and functional limitations. Gastrointestinal symptoms, particularly bloating and altered bowel habits, are common in this population<sup>1</sup>, yet are often not fully investigated.

In this case, a patient with fibromyalgia presented with persistent bloating and intermittent constipation, with symptoms triggered by grains, beans and legumes. In addition to these foods, she was also excluding dairy products and nightshades.

# Patient Presentation

| Characteristic       | Details   |
|----------------------|---|
| Age                  | Early 40s (female)  |
| Symptoms             | Bloating, intermittent straining and difficulty emptying bowels   |
| Medical history      | Fibromyalgia  |
| Diet                 | Modified Autoimmune Paleo (excluding gluten, dairy, nightshades, beans, legumes, grains); tolerance testing showed recurrence of symptoms with reintroduction |
| Intervention history | 5-HTP, tyrosine, taurine, B-complex, vitamins C & D, calcium, magnesium, CoQ10, carnitine   |

## Microbiome Findings (Baseline)

A Microbiome Explorer – Comprehensive analysis was performed and revealed several microbial and GI marker abnormalities likely contributing to the patient’s bowel symptoms.

### Key findings included:

- Severely depleted secretory IgA, a marker of mucosal immunity<sup>2</sup>.
- Elevated methane-producing Archaea, associated with slow transit<sup>3</sup> and constipation.
- Borderline low pancreatic elastase, indicating reduced digestive enzyme secretion.

| Table 1. Microbiome Explorer™ Comprehensive Report Breakdown (Baseline) |                               |  |   |
|---|-------------------------------|--|---|
|   | Marker                        | Baseline Finding   | Clinical Interpretation                               |
| Pathogen Markers  | Pathogens                     | Not detected   | Pathogen ruled out                                    |
| GI Markers  | Pancreatic elastase           | Ref Range: 200–408µg/ml<br>0 720<br>Borderline Low: 144.5µg/ml | Reduced digestive enzyme secretion                    |
|   | Secretory IgA                 | Ref Range: 500–2000µg/g<br>0 10000<br>Low: 40.5 µg/g           | Compromised mucosal immunity                          |
| Microbiome Markers  | Methane – producing microbes  | Compared to healthy cohort<br>AVG<br>High: +1.46σ              | Associated with slow intestinal transit, constipation |
|   | Histamine– producing microbes | Compared to healthy cohort<br>AVG<br>Borderline High: +1.04σ   |   |

# GI Markers

## Intervention

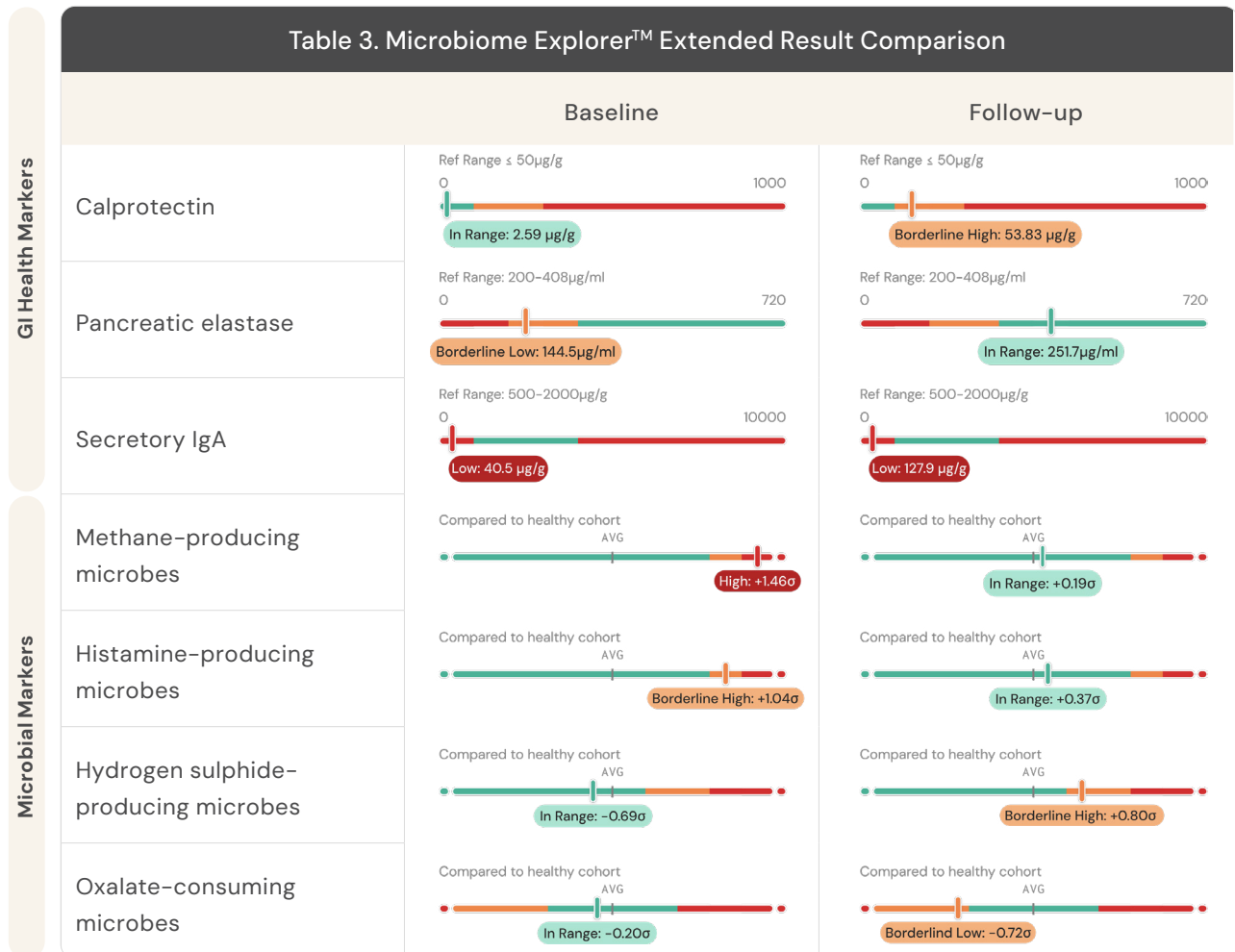
Treatment goals included reducing bloating, improving stool regularity, gradually expanding the diet, and reducing fatigue, muscle aches, and anxiety. Based on the microbiome findings, the intervention plan aimed to reduce methanogen overgrowth, support mucosal immunity, and improve digestive secretory function.

| Table 2. Intervention Plan   |                     |  |
|--|---------------------|--|
| Intervention   | Dosage              | Purpose  |
| <i>Lactobacillus reuteri</i> LR-11   | 2 billion CFU daily | Reduce methane-producing microbes; <i>L. reuteri</i> DSM 17938 not available |
| Multi-strain probiotic incl. <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> BI-04  | 2 billion CFU daily | Support mucosal immunity, upregulate secretory IgA <sup>4</sup>              |
| Digestive enzyme supplement with ginger<br><br>Amylase 15 000 DU<br>Protease 50 000 HUT<br>Lipase 1200 LipU<br>Beta-D-galactosidase 1500 ALU<br>Cellulase 300 CU<br><i>Ananas comosus</i> 2400000 PU<br><i>Taraxacum officinale</i> extract 166mg<br><i>Zingiber officinale</i> extract 42mg | With each meal      | Enhance digestive function   |
| Conscious eating education   | N/A                 | Improve digestion through mindful eating                                     |

## Follow-up and Retesting

After four months, repeat Microbiome Explorer Extended testing demonstrated clear improvements across key microbiome and functional markers:

- **Methanogen overgrowth resolved**, returning to within the healthy range.
- **Digestive function improved**, with pancreatic elastase moving into the optimal range.
- **Mucosal immunity possibly improved**, with secretory IgA increasing substantially, though still below optimal.



An unexpected rise in calprotectin to borderline high was identified, potentially linked to new nicotine exposure from vaping<sup>5,6</sup>. Patient subsequently elected to cease vaping.

# Clinical Outcome

In line with the follow-up findings, the patient reported the following symptomatic improvements:

- Full resolution of bloating and constipation within four months.
- Successful reintroduction of gluten-free grains, legumes, and fermented foods without recurrence of symptoms.
- Gluten-containing foods remained problematic, provoking joint stiffness.

Table 4. Gastrointestinal Symptom Rating Scale (GSRS)

| Symptom        | Baseline | Follow-up |
|----------------|----------|-----------|
| Reflux         | Nil      | Nil       |
| Abdominal pain | Nil      | Nil       |
| Indigestion    | Minor    | Nil       |
| Diarrhoea      | Minor    | Nil       |
| Constipation   | Mild     | Nil       |
| Total GSRS     | Minor    | Nil       |

# Ongoing Management Plan

Since secretory IgA remained below the optimal range, an ongoing management plan was implemented to further support mucosal immunity and dietary tolerance. Initial interventions for methanogen overgrowth and pancreatic enzyme support were discontinued as these markers had normalised.

Table 5. Ongoing Management Plan

| Intervention  | Purpose                  |
|---|--------------------------|
| <i>Bifidobacterium animalis</i> subsp. <i>lactis</i> BB-12 and <i>Saccharomyces boulardii</i> | Support mucosal immunity |
| Galacto-oligosaccharides (GOS) 4g/day   | Support IgA production   |

## Clinical Insights

This case demonstrates how Microbiome Explorer testing can:

- Identify hidden contributors to chronic GI symptoms, including low secretory IgA, elevated methanogens, and low pancreatic enzyme output.
- Guide personalised, integrative interventions that improve both symptoms and biomarkers.
- Reinforce the importance of environmental and behavioural inputs, as highlighted by vaping-associated calprotectin rise.
- Provide objective measures to monitor progress and support patient motivation.



## Conclusion

Microbiome Explorer analysis uncovered subtle but meaningful microbial and functional imbalances in a patient with fibromyalgia and chronic GI symptoms. Guided by these insights, a targeted integrative approach achieved full resolution of gastrointestinal symptoms and improved tolerance to previously excluded foods. This case illustrates the clinical value of microbiome testing in uncovering overlooked drivers of gastrointestinal dysfunction and enabling confident, personalised care.

## References

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