LIVE WEBINAR

Clinical Conversations with Chantel Yates:

Simplifying Functional Gastrointestinal Disorders with Microbiome Insights

Wednesday 14 May 2025 | 12PM AEST

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Meet your speakers

Dr Brad Leech
Nutritionist and Lead Clinical Educator

Chantel Yates
Naturopath and Herbalist

All participants have been muted

Questions will be answered at the end of each case study

Add your questions in the chat to have them answered live

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Disclaimers

- The information provided in this webinar is for the use of qualified healthcare professionals.
- The information contained in this webinar is in no way to be taken as prescriptive or to replace a healthcare professional's duty of care and personalised care practices.
- The clinical opinions and patient case studies shared by presenters are solely those of the individual presenters and do not necessarily represent the view of Co-Biome.

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Learning Objectives

1. Describe the defining features of FGIDs and current diagnostic criteria, including the Rome IV framework.
2. Identify common microbiome patterns associated with IBS and visceral hypersensitivity, including relevant MetaXplore markers.
3. Evaluate evidence-informed microbiome restoration strategies using herbal, nutritional and naturopathic interventions.
4. Apply clinical approaches to transitioning patients off long-term restrictive diets with safety and care.
5. Integrate microbiome testing into patient-centred care to improve symptom resolution and treatment satisfaction in FGIDs.

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Overview: Using Gut Microbiome Testing in FGID

IBS and "Histamine Issues"
55-year-old female

Visceral Hypersensitivity
33-year-old male

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What is FGID?

Functional Gastrointestinal Disorders

- **Gut-brain axis dysregulation (DGBIs)**
- **Visceral hypersensitivity**
- **Low-grade immune activation**
- **Altered microbiota composition**
- **Post-infectious changes** following food poisoning or gut infections (TD)

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What is FGID?

Functional **G**astro**i**ntestinal **D**isorders

- **Effects 40% globally:** IBS, FD, and functional constipation the most prevalent (Singh et al., 2022)
- **40% GIT diagnosis in Australia** (Mahadeva, 2023)
- IBS is the **most common FGID**, making up **12% of all primary care visits** and **25–50% of gastroenterology clinic visits** (Huang et al., 2023)
- IBS is **1.7 times more common in women/AFAB's** (IBS-C) (Lovell & Ford, 2012)
- **Functional Dyspepsia (FD)** overlaps with IBS in up to **25–30% of cases** (Singh et al., 2022)
- **SIBO is present in up to 78% of IBS patients (IBS-D and M)**

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Diagnosis?

Rome IV Criteria - IBS-C, IBS-D, IBS-M and IBS-U

Recurrent abdominal pain on average at least 1 day per week in the last 3 months, associated with two or more of the following:

- Related to defecation
- Associated with a change in stool frequency
- Associated with a change in stool form (appearance)

Criteria must be fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis (Lacy et al., 2016)

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Visceral Hypersensitivity & Gut-Brain Axis Flowchart

Flowchart for mapping drivers, decisions and interventions in FGIDs/IBS

Patient with FGIDs/IBS

↓

Assess symptom profile, history and key triggers

Identify dominant drivers

Gut Driven

- Dysbiosis / SIBO / IMO
- Histamine producers / low SCFA species
- Methanogens – distension
- Post-infectious changes

Brain Driven

- Stress / trauma / anxiety
- Central sensitization
- ↓ vagal tone / HPA dysregulation
- Food fear / symptom hypervigilance

Gut Side Interventions

- Microbiome testing
- SIBO treatment / IMO reduction
- Butyrate support / mucosal healing
- Diet liberalisation / prebiotic reintroduction

Brain Side Interventions

- Gut directed hypnotherapy (e.g. Nerva)
- CBT / mind-body therapies
- Vagal stimulation: breath, hum, cold
- Adaptogen, nervous system tonics

Modulate symptom loop

↓

Maintenance, education, empowerment

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Role of Gut Microbiome Testing in FGID

- **Reduced diversity**
- **Low levels of SCFA-producing microbes** (e.g. *butyrate*)
- **Overgrowth of pathobionts** (e.g. Proteobacteria, *E. coli*, *C. diff*, Klebsiella, Enterobacteriaceae) (Li et al., 2024, Kadhim et al., 2023)
- **Elevated Methanogens** (IBS-C) and **H2S producers** (IBS-D)
- **Elevated oral species colonising the colon** (Li et al., 2024)

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Patterns of microbiome imbalances in FGID

Key microbiome markers to assess in IBS cases

30 + Methanogens (*Methanobrevibacter spp.*, Methanosphaera)	IBS-C, Bloating, Constipation, Motility
Low butyrate producing species	Intestinal barrier function, inflammation, visceral sensitivity, motility
Elevated hydrogen sulphide producing species	IBS-D: pancreatic insufficiency, dysbiosis, malabsorption
410 + Oral species (e.g., Streptococcus, Rothia, Veillonella, Fusobacterium)	Oral bacteria in the gut → oral-gut translocation → gut microbiome imbalance
Lower gut microbiome diversity	Restrictive diets (low-FODMAP)

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Patterns of microbiome imbalances in FGID

Key microbiome markers to assess in Visceral Hypersensitivity

30 + Methanogens (*Methanobrevibacter spp.*, Methanosphaera)	Slows motility → luminal distention → mechanical hypersensitivity (Pimentel et al., 2012)
Low butyrate producing species	Impaired barrier integrity → ↑ mucosal inflammation → sensory nerve activation (Geirnaert et al., 2017)
Histamine producing species (Klebsiella, Morganella, Enterobacter)	Microbial histamine → mast cell activation → H1/H4 receptor-mediated pain signalling (De Palma et al., 2022)
410 + Oral species (e.g., Streptococcus, Rothia, Veillonella, Fusobacterium)	Translocation → immune activation → mucosal neuroinflammation (Lee et al., 2020)
Lower gut microbiome diversity	Restrictive diet. Loss of resilience/stability → ↑ immune reactivity and permeability → VH susceptibility (Sabo & Dumitrascu, 2021)

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CASE 1:

Irritable Bowel Syndrome – Constipation Dominant (IBS-C)

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Age/Gender: 57yo, AFAB

Diagnosed conditions: IBS-C, SIBO (CH4), Histamine Intolerance.

Presenting symptoms: Abdominal pain, constipation, bloating, "food intolerance", with brain-fog and fatigue, anxiety/stress.

Case history: 2018 episode of food poisoning: onset abdominal pain, bloating (progressively worse), constipation (always).

Diet: Since 2018 - Low FODMAP (DF & GF), SIBO Bi-phasic (stuck on phase 1-2), Low-Histamine.

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Medication/supplements:

MHT	Oestradiol patch
Probiotic	*Bacillus coagulans* (MTCC 5260) - 1bd Biogaia Protectis - 1bd
Antimicrobial	*Allium sativum* (Garlic fresh bulb) 1500mg bd
Iberogast	20 drops daily
Prebiotic	PHGG - 15g daily
Antihistamine	Quercetin - 500mg bd
Laxative	Mg Oxide - 2070 mg daily

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Patient Goals

Short-term	Medium-term	Long-term
• Reduce pain and bloating	• Energy and brain-fog	• Eat normally again if possible • "I'd love to be able to go out to dinner with my husband again"

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Microba Microbiome Test Results - *July 2024*

Number of species identified	155 (low-normal)
Microbial Diversity	3.67 (low-normal)
Butyrate producing microbes	15.38% (low-normal)
Proteobacteria	4.65% (high-normal)
Desulfobacterota	0.02%
***Hexa-LPS**	4.25% (High)
***Methane**	2.10% (High)
Oxalate consumption	1.03% (ok)
Propionate	18.92% (High)
Trimethylamine producing microbes	9.31% (Ok)
H2S (*Bilophila, Desulfovibrio)*	BDL
***Escherichia**	4.24% (v High)
Mucin degradation	938.23 (High)
IPA	0.08 (Low)
Beta-glucuronidase	26.71%

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5 most abundant species

1. *Akkermansia muciniphila* (12.50%)
2. *Prevotella bivia* (7.27%)
3. *Bacteroides_B dori* (5.30%)
4. *E.coli_D* (4.24%)
5. *Streptococcus oralis* (2.51%)

Note: Oral species = 10

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Assess: Outcome of Testing - Key Issues

Red flags

- N/A

Gut terrain

- Intestinal Permeability
  - high Hexa-LPS
  - low IPA and butyrate

Dysbiosis

⇧ *E. coli*, Akkermansia, Methanobrevibacter, oral species

⇩ Butyrate producers, IPA, Acetate, Diversity, Species richness

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Apply: Patient Management Plan

Dietary prescription	Specific pre-/probiotic prescription	Personalised supplement recommendations	Patient education
• Low and slow • Increase RS-III • Flax seeds (ground) – 2 Tbsp daily • Chia pudding	• *Saccharomyces cerevisiae* var *boulardii* Biocodex alternate with • *L.reuteri* DSM17938	• L-glutamine - 5g bd • Curcumin - 500mg bd • EGCg - 400mg bd • PHGG - 6g/d • Herbal: - Saffron - Pomegranate - Oregano - Licorice	• Long term goal – high fiber Mediterranean style diet for microbiome restoration • Nerva app • Mindfulness/self care • Workplace stress • Hormone influence • Exercise

Timeframe: 12 weeks

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"I'm doing magic poo's! I think it's the flax and chia seeds."

"I went out to dinner with my husband for the first time in ages. I'm trying fermented foods now!"

"Still a little bloated but SO much better, I can handle a bit of bloating."

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Results of Re-testing with MetaXplore

7 months between tests

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MetaXplore Test Results

Gastrointestinal Health Marker	Result	Reference Range
Secretory IgA	<149.56	500.00 µg/g - 2,000.00 µg/g

Microbial Marker (RESEARCH USE ONLY, NOT FOR DIAGNOSTIC USE)	Relative Abundance	Distance from Average
Beta-glucuronidase producing microbes	ND, 31.17%	+1.38

BORDERLINE

Microbial Marker (RESEARCH USE ONLY, NOT FOR DIAGNOSTIC USE)	Relative Abundance	Distance from Average
Methane producing archaea	ND, 0.83%	+1.21
Propionate producing microbes	ND, 7.46%	+1.12
Oxalate consuming microbes	ND, 0.55%	-1.08

MUCOSAL IMMUNITY

DETOX

MOTILITY

DETOX

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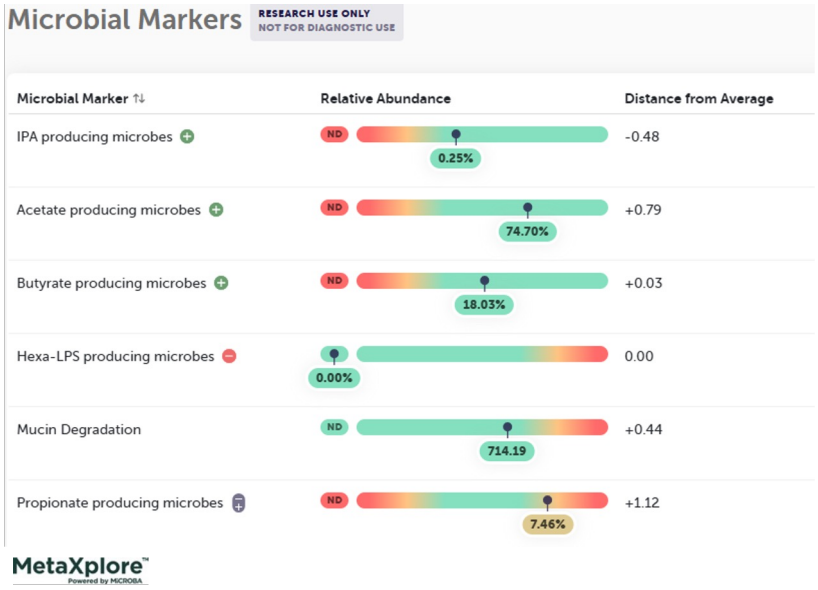
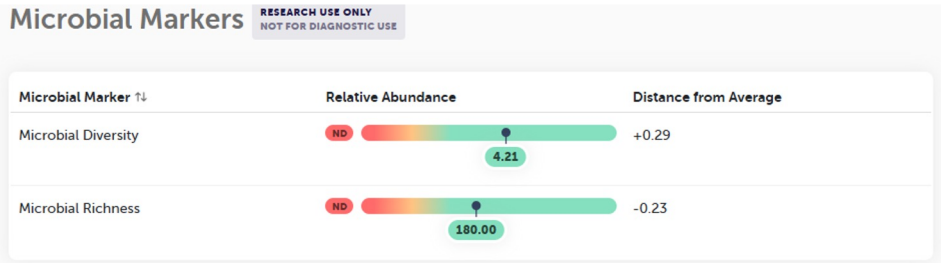
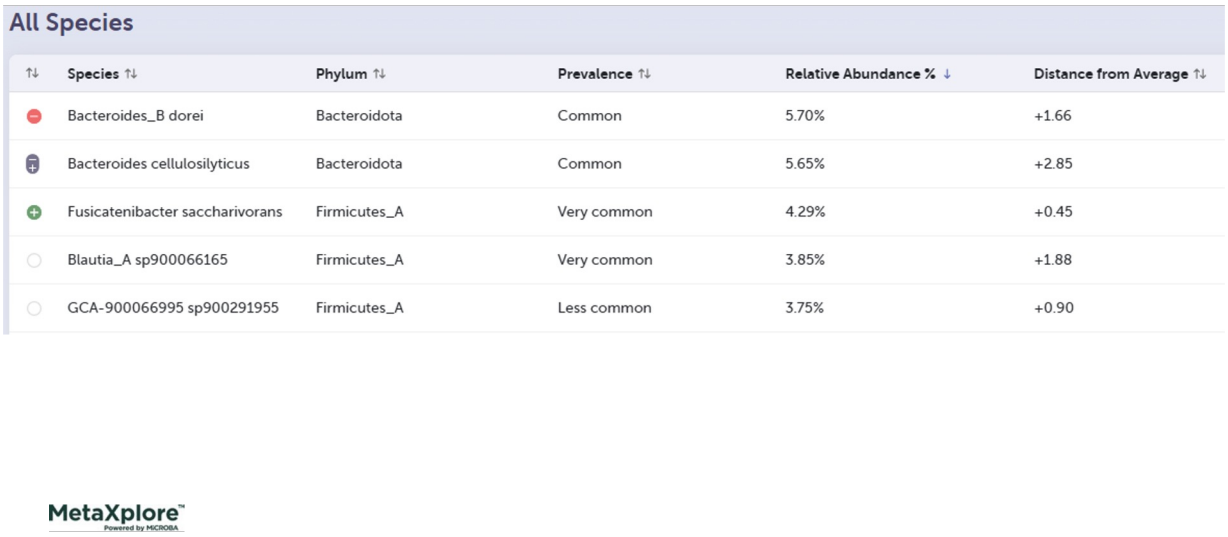
MetaXplore Results - Inflammation



MetaXplore Results - Diversity



MetaXplore Results - Top 5 Species



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MetaXplore Results - Archaea

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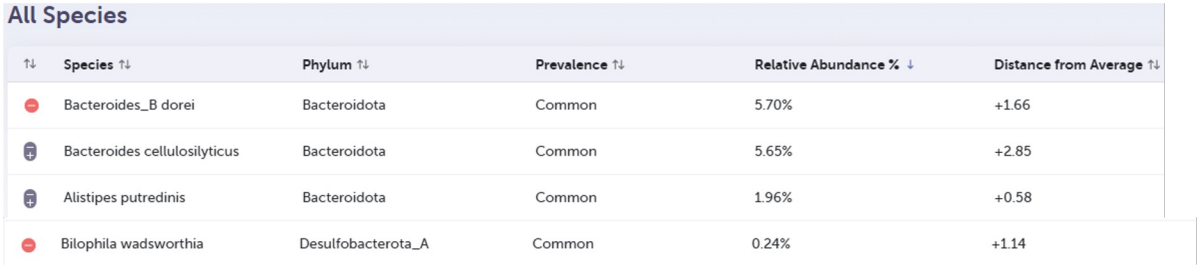
MetaXplore Results - Pathobiont



All Species

	Species	Phylum	Prevalence	Relative Abundance %	Distance from Average
−	Bacteroides_B dorei	Bacteroidota	Common	5.70%	+1.66
+	Bacteroides cellulosilyticus	Bacteroidota	Common	5.65%	+2.85
+	Alistipes putredinis	Bacteroidota	Common	1.96%	+0.58
−	Bilophila wadsworthia	Desulfobacterota_A	Common	0.24%	+1.14

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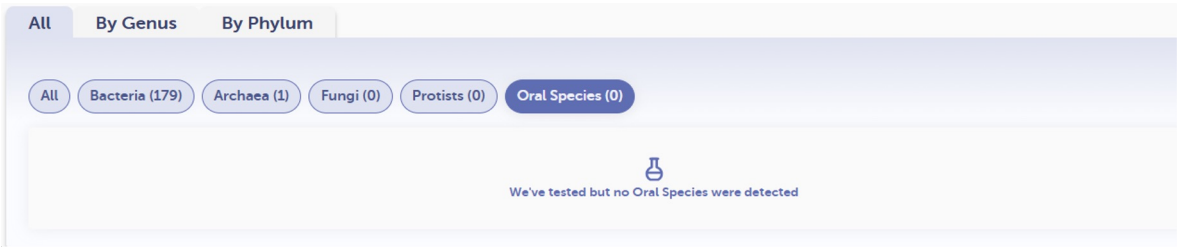
MetaXplore Results - Oral Species



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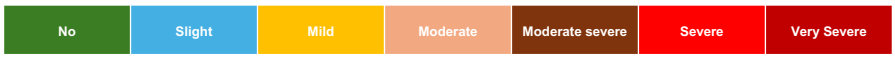
Gastrointestinal Symptom Rating Scale - IBS

Before	After
Abdominal Pain: Moderate discomfort	**Abdominal pain**: No discomfort at all
Bloating: Moderate severe	**Bloating:** Mild discomfort
Constipation: Moderately severe discomfort	**Constipation:** No discomfort at all
Diarrhoea: No discomfort at all	**Diarrhoea**: Slight discomfort
GSRS: Moderate/severe discomfort	**GSRS**: Slight discomfort

7 months



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Key Patterns of Change (*July 2024 → Feb 2025*)

Areas improved:

Proteobacteria decreased	4.65% → 1.77%	Indicating reduced inflammation risk
***E.coli* no longer detected**	4.24% → ND	Linked to lower hexa-LPS production & intestinal barrier repair, lower systemic inflammation (brain fog, fatigue, food reactions)
Butyrate increased	15.38% → 18.03%	Better short-chain fatty acid production, supporting gut healing & energy for colon cells
Total species diversity increased	155 → 180	Increased resilience
Methane production reduced	2.10% → 0.83%	Improved motility, reduced bloating and constipation as well as histamine reactions
Hexa-LPS reduced	4.25% →0.00%	Reduced overall inflammation

Areas needing attention:

Secretory IgA diminished	1241 → <149	Could indicate delay in sample, herbal antimicrobials(?)
Beta-glucuronidase increased	26.27% → 31.17%	Linked to oestrogen recycling
***Bilophila wadsworthia* increased from ND**	ND → 0.24%	Can contribute to IP and offensive smelling flatulence

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Apply: Patient Management Plan Ongoing

Dietary prescription	Specific pre-/probiotic prescription	Personalised supplement recommendations	Patient education
• Expanding to a high-fiber diet • Continue flax, chia, berries • Boost Brassicas	• *L. reuteri* • HMO's 2'fl	• Herb Mix - Saffron - Pomegranate - Black Cohosh - Ginger	• Slowly expand diet: - Fructose first - Oligosaccharides - Histamine • Continue NS support: - Mindfulness - Time in nature - Yoga

Timeframe: 12 weeks

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Case 1: Clinical Reflections

The patient was hyper-reactive, we had to tweak and change the treatment a lot

Dietary expansion is slow going, the patient was terrified of food. Too fast and she would stop everything, and progress would back-slide.

NS support, early childhood trauma, chronic stress need to be addressed (refer)

Microbiome restoration and visceral hypersensitivity takes time!

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Q&A: Case 1

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CASE 2:

Visceral Hypersensitivity

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Age/Gender: 33yo AMAB

Diagnosed conditions: PI-IBS

Presenting symptoms: Abdo pain 8/10 (LRQ/LMQ) “raw feeling”, Abdo discomfort (w legumes, alcohol, high fibre), BM frequency/urgency (2–5/day), variable Bristol 2–6, **offensive gas**.

- Worse for stress/anxiety, improved with flatus/BM

Case history:

- Chronic IBS symptoms post-Giardia (15 yrs ago)
- Recurrent “raw gut”
- Prior Hx: duodenal ulcers (teen), Blasto dx (3 yrs ago)
- Dig deeper, hx early childhood trauma and chronic stress
- FHx: diverticulitis, bowel cancer, GERD

Diet: low dairy, low gluten, SAD, avoiding alcohol

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Medication/supplements:

- Nil currently
- Hx ABX: Metronidazole (Giardia), Flagyl and Triple Therapy (Blasto)

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Patient Goals

Short-term	Medium-term	Long-term
• Reduce pain and urgency	• Regulate BM • Minimal pain (can we get rid of it completely?) • Digestive comfort	• Fix gut so he can eat normally and enjoy occasional beer and wine • High-fibre diet

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MetaXplore Test Results - *June 2023*

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Let's look a little deeper at the details…

Microbial Marker	Relative Abundance	Distance from Average
Microbial Diversity	ND — 3.65	-0.96
Microbial Richness	ND — 134.00	-1.21

All Genera

Genus	Phylum	Prevalence	Relative Abundance %	Distance from Average
Blautia_A	Firmicutes_A	Very common	15.81%	+1.87
Bacteroides	Bacteroidota	Very common	15.18%	+1.91
Bacteroides_B	Bacteroidota	Very common	10.04%	+1.45
Faecalibacterium	Firmicutes_A	Very common	7.90%	+0.46
Fusicatenibacter	Firmicutes_A	Very common	7.39%	+0.98

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Assess: Outcome of Testing

Red flags	Gut terrain	Dysbiosis
• Nil	• Elevated sIgA and H2S, low-normal IPA, butyrate	• Low diversity and species richness • Higher than ideal bacteroides • Lower than ideal butyrate • *E. coli* - 0.23% • Bilophila 0.22% • *Klebsiella pneumoniae* 0.05% • 5 x oral species!

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Apply: Patient management plan

Dietary prescription	Specific pre-/ probiotics/ herbal prescription	Personalised supplement recommendations	Patient education
• Slowly ease into high-fiber whole foods diet • Increase cruciferous slowly (broccoli stalks and sprouts)	• *L. plantarum* 299v • Custom Prebiotic: - PHGG - HMO - Acacia fiber - Pink pitaya ▪ low & slow approach, start with 1 tsp/day & build up to 1 TBSP	• Multivitamin • Vit D - 5000iu • Zinc carnosine • L-glutamine • Pomegranate husk • Gynostemma/green tea - 2-3 cups daily	• Macros/exercise - Get the right balance of protein, fibre, carbs & fats - Over exercise caution - Reduce sat fat

Timeframe: 12 weeks

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"I feel better than I've ever felt in my life."

"I don't remember the last time I have been pain free for this long!"

"Still getting occasional smelly farts."

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Results of Re-testing with MetaXplore

6 months between tests

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MetaXplore Test Results

Before

OUT OF RANGE

Gastrointestinal Health Marker	Result	Reference Range
Secretory IgA	3,217.60	500.00 µg/g - 2,000.00 µg/g

BORDERLINE

Microbial Marker ↑↓ RESEARCH USE ONLY NOT FOR DIAGNOSTIC USE	Relative Abundance	Distance from Average
Microbial Diversity	3.65	-0.96
Propionate producing microbes	8.26%	+1.27
IPA producing microbes	0.18%	-0.71
Mucin Degradation	780.04	+0.78
Hydrogen sulphide producing microbes	12.25%	+1.07
BCAA producing microbes	65.16%	+0.84
Trimethylamine producing microbes	3.91%	+0.77
Beta-glucuronidase producing microbes	29.30%	+1.22

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MetaXplore Test Results

After

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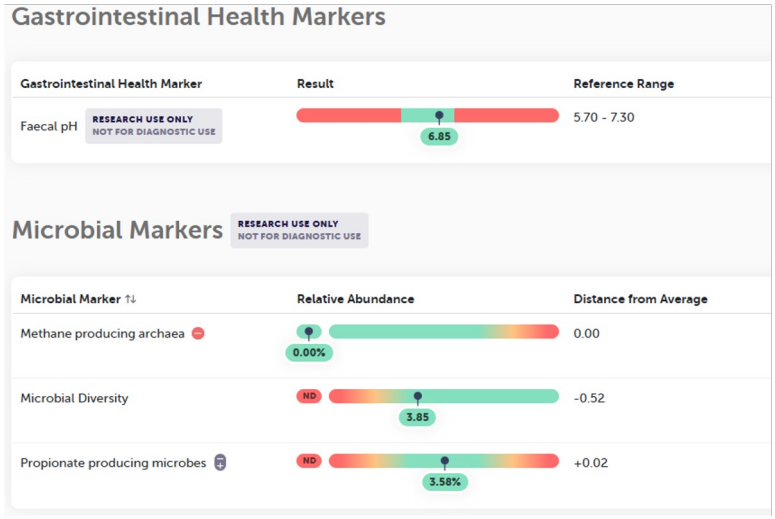
MetaXplore Results - Intestinal Motility



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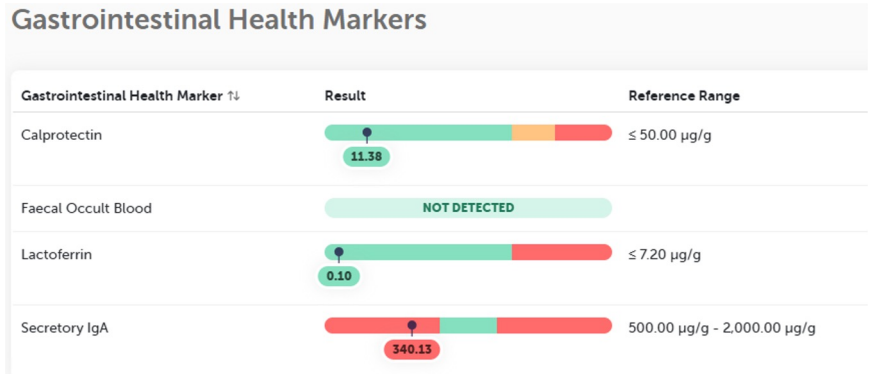
MetaXplore Results - Intestinal Inflammation



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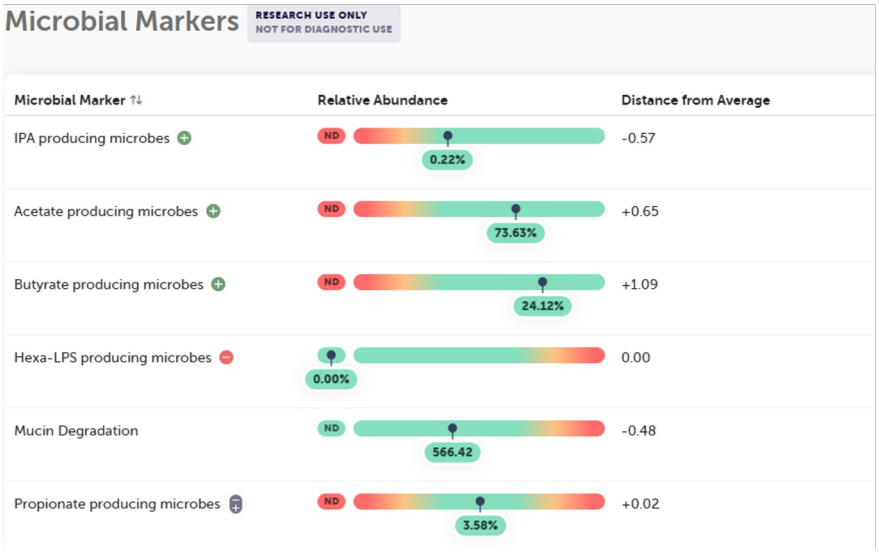
MetaXplore Results - Intestinal Inflammation



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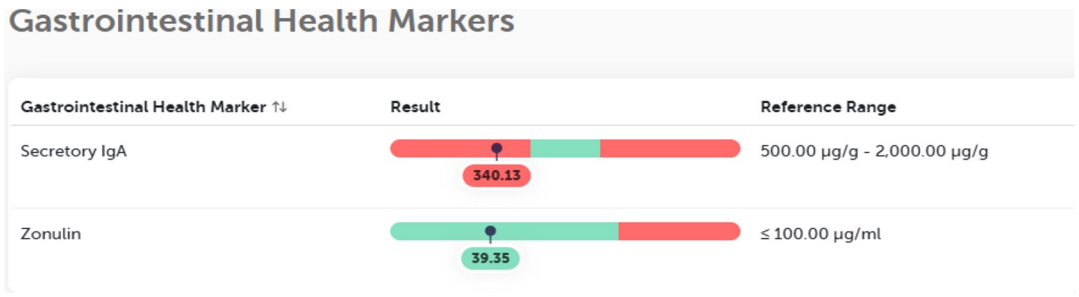
MetaXplore Results - Intestinal Barrier



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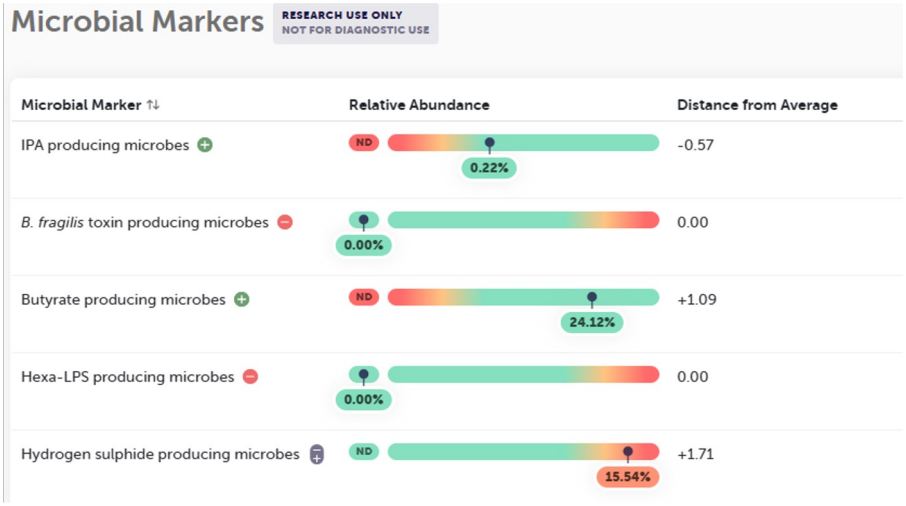
MetaXplore Results - Intestinal Barrier



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MetaXplore Results - Systemic Inflammation

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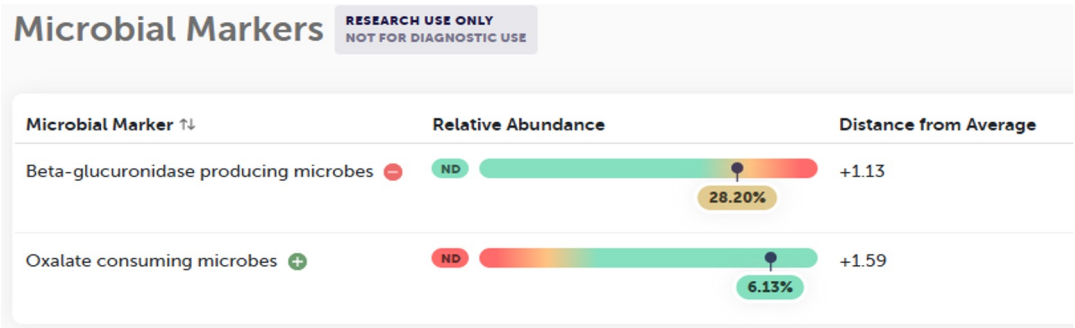
MetaXplore Results - Detox/Retox



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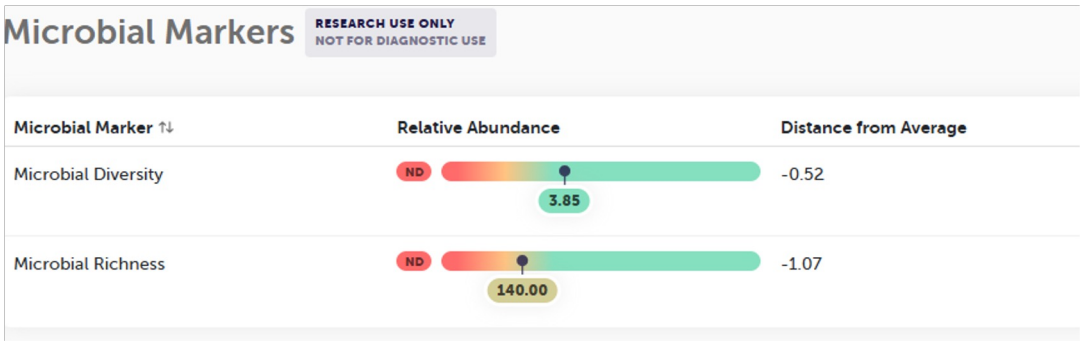
MetaXplore Results - Diversity



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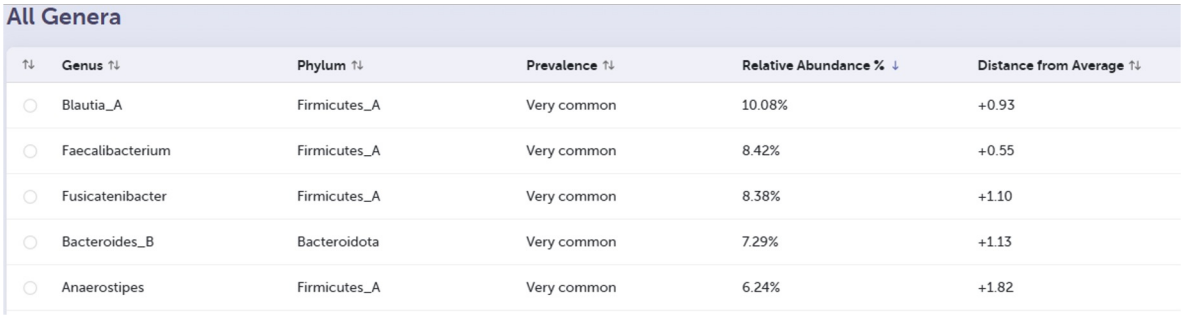
MetaXplore Results - Top 5 Species



Genus	Phylum	Prevalence	Relative Abundance %	Distance from Average
Blautia_A	Firmicutes_A	Very common	10.08%	+0.93
Faecalibacterium	Firmicutes_A	Very common	8.42%	+0.55
Fusicatenibacter	Firmicutes_A	Very common	8.38%	+1.10
Bacteroides_B	Bacteroidota	Very common	7.29%	+1.13
Anaerostipes	Firmicutes_A	Very common	6.24%	+1.82

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MetaXplore Results - Pathobiont

All Species

	Species	Phylum	Prevalence	Relative Abundance %	Distance from Average
	Bacteroides_B vulgatus	Bacteroidota	Common	6.67%	+1.32
	Bacteroides uniformis	Bacteroidota	Very common	2.84%	+1.07
	Alistipes putredinis	Bacteroidota	Common	1.04%	-0.08
	Dorea longicatena_B	Firmicutes_A	Common	0.64%	+0.89
	Bacteroides_B sartorii	Bacteroidota	Rare	0.62%	

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MetaXplore Results - Oral species

All Species

	Species	Phylum	Prevalence	Relative Abundance %
	Streptococcus salivarius	Firmicutes	Common	0.19%
	Prevotella bivia	Bacteroidota	Less common	0.03%

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Key Patterns of Change (*date → date*)

Areas improved:

Pathobionts decreased	0.27% → BDL	**Key Shift:** E.coli **0.23% abundance** to now **undetectable**—a great improvement!
***Bacteroides spp.* improvement**	25.22% → 12.46%	Within the ideal range
Butyrate production	14.97% → 24.12%	I attribute this shift to the patients radical sx improvement

Areas for further improvement:

H2S production	12.25% → 15.54%	Now **high**! Interestingly though sulphur smell has reduced (but still present)
Microbial diversity	134 species → 140 species	**Evenness:** The average evenness of microbes has improved **Now: 3.85**— still 3 **species** above 5% relative abundance, heading in the right direction but still needs improvement (aim for 200+)

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Apply: Patient Management Plan Ongoing

Dietary prescription	Specific pre-/pro-biotics/herbal prescription	Personalised supplement recommendations	Patient education
• Increase fibre - Legumes, grains, fruits and vegetables • Polyphenols daily	• HMO's - continue for another 6-12 months for GIT healing	• EGCG • Multivitamin/Fertility nutrients • Gynostemma tea - as needed for smelly farts	• Excellent NS work - continue daily NS regulation practices (meditation, yoga, exercise) • Pre-conception diet and lifestyle recommendations • Re-test microbiome 6-12 monthly with family hx bowel cancer

Timeframe: 6 months

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Case 2: Clinical Reflections

Go slow on high fiber diet – major bloating and stool urgency!

Anxiety, especially food anxiety was a major issue, patient needed a lot of hand-holding

H2S picture is curious, interested to see if it reduces with the reduction in truffle in the diet

Keep the individual in the frame - the patient feels great! Don't overly prescribe based on test results

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Transitioning from a Restrictive Diet

Steps & considerations when patients have been on long-term restrictive diets

- ✓ Work on underlying inflammation/immune activation first
- ✓ Reduce VH (butyrate)
- ✓ Low and slow (sprinkle and sip)
- ✓ Start with fructose containing foods if low FODMAP (eat and apple)
- ✓ Slowly reintroduce oligosaccharides (lentils, mung, adzuki, firm tofu, black turtle beans first)
- ✓ Onion and garlic, kidney beans, chickpeas later
- ✓ Give a realistic timeframe

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Key Highlights

- **FGID affects 40% globally with IBS being the most common disorder.**
- **Gut microbiome testing can provide insights into diversity, SCFA production, pathobionts, methanogens, hydrogen sulphide production and oral species that may be contributing to FGID.**
- **Increased methanogens in the microbiome are often present in IBS-C, functional constipation and bloating.**
- **Elevated hydrogen sulphide producing species may be present in IBS-D and dysbiosis.**
- **Low butyrate may be seen in visceral hypersensitivity.**
- **Increased oral species can be indicative of dysbiosis.**
- **Long-term restrictive diets can lead to reduced microbial diversity.**

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Functional Gut Microbiome Profile[2]

METAXPLORE GI
Functional Gut Microbiome Profile[2]
Gastrointestinal Health Markers[1]

METAXPLORE GI PLUS
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UPDATED PRICING

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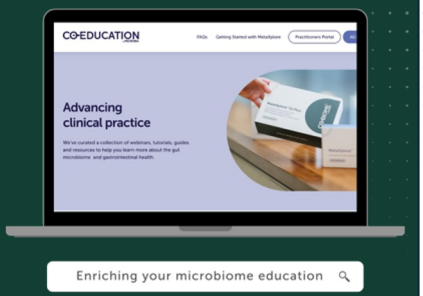

Visit **Co-Education** for additional resources You can access this via your Practitioner Portal: practitioner.co-biome.com/login

Additional resources:

- Prebiotic Guide
- Low FODMAP Prebiotic Guide
- Dietary Impacts on the Gut Microbiome Guide
- Pathogen and Pathobiont Management Guide
- Interpretation Guide
- MetaXplore Range Report Interpretation Checklist
- Patient Referral Letter Template
- Testing Your Microbiome Patient Brochure
- Patient Handouts – Ellagic acid; Arabinoxylan; Beta-glucan; Inulin; FOS; GOS; Pectin; Resistant starch

Register as a Co-Biome Clinician today for microbiome educational resources at your fingertips!

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