

Microbial diversity

Marker Guide

What this marker measures

This marker measures gut microbial diversity using the Shannon Diversity Index, which captures both the number of detected species, or richness, and how evenly they are distributed, or evenness, within the microbial community. A low score may reflect too few species, dominance by a small number of species, or both. Considering microbial diversity alongside richness helps provide a fuller picture of gut microbial community structure.

Clinical associations

Consider this marker when your patient presents with:

GI presentations

IBS-type symptoms, irregular bowel habits, suspected dysbiosis, or inflammatory bowel disease¹⁻⁴

Gut-systemic presentations

Inflammatory arthritis, liver disease, obesity, or metabolic syndrome where gut-immune or gut-metabolic pathways may be relevant⁸⁻¹²

Microbiome recovery

Baseline assessment, post-antibiotic recovery, or post-infectious gut disturbance⁵⁻⁷

Interpreting the result

All results are compared to Microba's healthy cohort to determine whether they fall within or outside the expected range.

LOW

Microbial diversity is lower than expected

May suggest reduced microbiome resilience or dysbiosis. Review the species table for dominant organisms.

Action: see patient management insights below

WITHIN RANGE

Microbial diversity is within expected parameters

This suggests balanced community diversity, with no clear evidence of a species dominating the community.

HIGH

Microbial diversity is higher than expected

Usually not a concern and may reflect a diverse diet. High diversity can occasionally co-occur with pathobionts or slower transit. Review the species table alongside symptoms, transit time, and other markers.

Patient management insights

Support microbial diversity through diet and lifestyle.

DIETARY STRATEGIES

- Varied or diverse diets with minimally processed foods may be associated with increased microbial diversity¹³⁻¹⁶

SUPPLEMENT PREBIOTICS

- High ALA (alpha-linolenic acid) oil supplementation (e.g. flaxseed oil) may increase microbial diversity¹⁷

LIFESTYLE FACTORS

- Ongoing exposure to nature (i.e. living in more rural/mountainous areas or touching soil every day) may increase faecal microbial diversity at the genus level^{18,19}



Tips for patients discussion

Your report shows lower-than-ideal gut microbial diversity. Think of your microbiome like a garden: we want many different species, not just a few dominant ones. A key way to support diversity is eating a varied, minimally processed diet with diverse plant foods and quality proteins.

How results are calculated

All microbiome marker results are compared against the Microba Healthy Cohort — a purpose-built group of more than 450 healthy individuals, with samples collected and analysed using the same workflow as patient samples.

Each marker is scored by comparing the patient's relative abundance against the cohort average. The distance from this average is expressed as standard deviations, and determines whether a result is classified as Low, Borderline, or High.

How the result scale works



The patient's relative abundance is compared to the Healthy Cohort average. A **negative** distance from average means the microbial group is less abundant than the Healthy Cohort. A **positive** distance means it is more abundant. Results falling outside the expected range are classified as borderline or high/low (borderline high/low: +/-0.68, and high/low: +/-1.28).

GRADE	DESCRIPTION
A	Body of evidence can be trusted to guide practice
B	Body of evidence can be trusted to guide practice in most situations
C	Body of evidence provides some support for recommendation, but care should be taken in its application
D	Body of evidence is weak, and recommendation must be applied with caution
PP H	Body of evidence is observational only and must be applied with caution
PP IV	Body of evidence is in vitro and must be applied with a high degree of caution

Evidence grading for patient management insights

The letter grades shown next to each patient management insight show the quality of the research behind it. Every insight provided has been through a rigorous review of the scientific literature and graded using the NHMRC Levels of Evidence, so you can see exactly how strong the evidence is before applying it in practice.