

Methane producing Archaea Marker Guide

What this marker measures

The collective capacity of methanogenic Archaea to produce methane gas.

Methanogens are often mistaken for bacteria, but they belong to Archaea – a distinct domain of microorganisms. Higher methane production is associated with slower intestinal transit and constipation, and may be relevant in patients with constipation, bloating, or abdominal distension¹⁻³.

Clinical associations

Consider this marker when your patient presents with:

Motility concerns

Constipation, slow gut transit, infrequent bowel motions.

IBS and functional bowel presentations

IBS-C or functional constipation.

GI symptoms

Bloating, abdominal distension, excess gas production.

Interpreting the result

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

LOW

Methane-producing potential is lower than expected

This result does not suggest methane-driven slowing of intestinal transit. No intervention needed for this marker.

WITHIN RANGE

Methane-producing potential is within expected parameters

Methane production is unlikely to be contributing to constipation or slowed transit in isolation.

HIGH

Methane-producing potential is higher than expected

May be associated with slower intestinal transit, constipation, or bloating. Action: see patient management insights below.

Patient management insights

Reduce methane producing potential and support healthy gut motility.

DIETARY STRATEGIES

- When aiming to reduce methane production, limiting or avoiding resistant starch supplementation may be effective^{4,5}. ^D
- When aiming to reduce methane production, limiting or avoiding inulin supplementation may be effective⁶. ^C
- Pomegranate extract supplementation (at least 656 mg phenolics, ~218 mg punicalagin) may reduce methane producing microbes.⁷ ^D

SUPPLEMENT PREBIOTICS

- *Lactobacillus reuteri* DSM 17938 may reduce methane production⁸. ^D
- When aiming to reduce methane production, limiting or avoiding *Bifidobacterium infantis* 35624 may be effective.⁹ ^D



Tips for patients discussion

"Your report shows elevated levels of methane-producing microorganisms called archaea. These can slow the movement of food through your gut, contributing to constipation and bloating. Adjustments to your fibre intake and specific probiotic support can help address this."

The community

Methane is not produced by a single species, it's a community-level function. Below are some of the most common, though this list is not exhaustive.

<i>Methanobrevibacter_A smithii</i>	<i>Methanosphaera stadtmanae</i>	<i>Methanobrevibacter_A smithii_A</i>
UBA71 MIC8911	UBA71 MIC7051	<i>Methanobrevibacter_A</i> MIC8668
<i>Methanomethylophilus alvus</i>	<i>Methanobrevibacter_A woesei</i>	<i>Methanomassiliicoccus_A</i> MIC7035
<i>Methanomassiliicoccus_A intestinalis</i>	<i>Methanosphaera sp900322125</i>	UBA71 MIC8186
<i>Methanobrevibacter_C arboriphilus_A</i>	UBA71 MIC7141	<i>Methanomethylophilaceae</i> MIC6753
<i>Methanosphaera sp002509095</i>	<i>Methanocorpusculum</i> MIC8834	<i>Methanomassiliicoccus_A</i> MIC7563
<i>Methanomassiliicoccus luminyensis</i>	<i>Methanobacterium formicum</i>	

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.