

Butyrate producing microbes

Marker Guide

What this marker measures

This marker measures the collective capacity of the microbial community to produce butyrate, a short-chain fatty acid that serves as the primary energy source for colonocytes. Butyrate supports gut barrier integrity, immune regulation, and anti-inflammatory signalling¹⁻⁶.

Clinical associations

Consider this marker when your patient presents with:

GI symptoms IBS-type presentation, irregular bowel habits, or post-antibiotic gut disturbance	Intestinal inflammation Suspected or diagnosed IBD, elevated calprotectin, or chronic low-grade intestinal inflammation
Gut barrier concerns Suspected increased intestinal permeability or gut barrier dysfunction	Metabolic presentations Insulin resistance or metabolic syndrome where gut inflammation may be relevant

Interpreting the result

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

LOW Butyrate-producing potential is lower than expected May indicate reduced capacity to support colonocyte fuel needs, gut barrier integrity, and immune regulation. Action: see Patient Management Insights guidance below.	WITHIN RANGE Butyrate-producing potential is within expected parameters This suggests capacity to support gut barrier maintenance and immune function	HIGH Butyrate-producing potential is higher than expected Usually not a concern in isolation and may reflect a fibre-rich dietary pattern or higher abundance of butyrate-producing taxa.
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Patient management insights

Support the conditions that help the entire butyrate-producing community thrive.

DIETARY STRATEGIES <ul style="list-style-type: none">Dietary fibre from rye sources may increase plasma butyrate levels⁷⁻⁹.A high-fibre (> 30 g/day) diet may increase circulating butyrate levels, particularly when fibre is derived from whole grain sources or consumed as part of a high-diversity plant-based dietary pattern^{7,10}.A high-diversity plant-based diet (≥30 unique plant foods per week), rich in vegetables, fruit, legumes, nuts, seeds, and whole grains with reduced meat and refined grain intake may increase circulating butyrate levels¹⁰⁻¹².	SUPPLEMENTATION PREBIOTICS <ul style="list-style-type: none">Resistant starch type 2 supplementation may increase butyrate producing microbes^{10,11}.Wheat bran may increase postprandial plasma butyrate levels¹²⁻¹⁴.PHGG supplementation may increase butyrate producing microbes¹⁵.
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Tips for patients discussion

Your report suggests a reduced capacity to produce butyrate, an important fuel for the gut lining that also helps regulate inflammation. We can support butyrate-producing microbes through targeted dietary changes, especially by increasing the fibres they thrive on.

The community

Butyrate 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>Acetatifactor sp900066565</i>	<i>Agathobacter faecis</i>	<i>Agathobacter rectale</i>
<i>Agathobaculum butyriciproducens</i>	<i>Anaerostipes hadrus</i>	<i>Clostridium_M sp000431375</i>
<i>Clostridium_Q sp003024715</i>	<i>Coprococcus_A catus</i>	<i>Coprococcus_B comes</i>
<i>Eubacterium_E hallii</i>	<i>Eubacterium_I ramulus</i>	<i>Faecalibacterium MIC7145</i>
<i>Faecalibacterium prausnitzii_C</i>	<i>Faecalibacterium prausnitzii_D</i>	<i>Faecalibacterium prausnitzii_G</i>
<i>Faecalibacterium prausnitzii_I</i>	<i>Gemmiger formicilis</i>	<i>Gemmiger MIC9530</i>
<i>Gemmiger sp003476825</i>	<i>Lawsonibacter asaccharolyticus</i>	<i>Odoribacter splanchnicus</i>
<i>Oscillibacter sp900066435</i>	<i>Roseburia hominis</i>	<i>Roseburia inulinivorans</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.