

B. fragilis toxin Marker Guide

What this marker measures

The presence of *Bacteroides fragilis* strains with the genetic capacity to produce *B. fragilis* toxin, also known as fragilylin. This toxin can disrupt epithelial barrier integrity by affecting cell-cell junctions, including E-cadherin mediated adhesion^{1,2}. While *B. fragilis* is a common gut inhabitant, only some strains carry the toxin gene, and toxigenic strains may contribute to intestinal barrier disruption³.

Clinical associations

Consider this marker when your patient presents with:

Diarrhoea presentations

Particularly persistent or recurrent diarrhoeal symptoms where microbial virulence factors may be relevant

Gut barrier concerns

Suspected increased intestinal permeability or gut barrier dysfunction

Interpreting the result

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

LOW

B. fragilis toxin-producing potential is lower than expected

Gut barrier integrity not likely compromised by this pathway.

No intervention needed for this marker.

WITHIN RANGE

Toxigenic *B. fragilis* detected within expected parameters

This level is not expected to meaningfully compromise intestinal barrier integrity in isolation.

HIGH

B. fragilis toxin-producing potential is higher than expected

This may indicate increased potential for *B. fragilis* toxin-mediated epithelial barrier disruption.

Action: see Patient management insights guidance below

Patient management insights

Support gut barrier integrity and reduce toxigenic *B. fragilis* impact.

SUPPLEMENTATION

- The probiotic *Bifidobacterium longum* BB536^{4,5} 



Tips for patients discussion

Your report suggests toxin-carrying *Bacteroides fragilis* strains are present. This does not mean you have an infection: *B. fragilis* is common in the gut, but some strains can produce toxins that may weaken the gut barrier. Targeted probiotics may help support gut integrity.

The community

2 species

Bacteroides fragilis

Bacteroides fragilis_A

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.