

Dr Test Doctor (Test Doctor) Test Clinic, 123 Test Street, Test Suburb 3125

Lab ID
 Patient ID P029035
 Ext ID 26059-0001

Test Patient
 Sex: Female • 2yrs • 01-Jan-24
 123, Test Street, Burwood Victoria 3125

RECEIVED
 28-Feb-26

BABY-Biome (0 - 3y)

Specimen type - Stool

Collected
 20-Feb-26

MACROSCOPIC DESCRIPTION

TEST	RESULT
Stool Colour	Brown
Stool Form	Formed
Mucous	PRESENT

OCCULT BLOOD

TEST	INTERPRETATION
Occult Blood	Negative

GIT FUNCTIONAL MARKERS

TEST	RESULT	H/L	REFERENCE	UNITS
Calprotectin	60.0		(<100.0)	ug/g
b-Glucuronidase	3922		(100-8000)	U/g
Pancreatic Elastase 1	355		(>200)	ug/g
pH	5.4	L	(5.5-7.5)	
Secretory IgA	800		(200-1500)	ng/mL
Steatocrit	0.5		(<15.0)	%
Transglutaminase IgA	25.0		(<100.0)	ug/g
Zonulin	32		(<180)	ng/mL

SHORT CHAIN FATTY ACIDS, BENEFICIAL

TEST	RESULT	H/L	REFERENCE	UNITS
Short Chain Fatty Acids, Beneficial	73.5		(>8.0)	umol/g
Acetate	68.30		(40.00-80.00)	%
Butyrate	10.80		(4.00-27.00)	%
Propionate	18.90		(0.00-20.00)	%
Valerate	2.00		(0.00-3.00)	%

IMPORTANT BIOCHEMICAL FUNCTIONS

TEST	RESULT	H/L	REFERENCE	UNITS
Ammonia/Urease Production	0.2110		(<0.5000)	%
Histamine Production	0.0990		(<1.0000)	%
Lipopolysaccharides (LPS) Production	1.0157		(<7.0000)	%
Sulphate Production	0.0405		(<3.0000)	%

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28-Feb-26**Practitioner Summary – Early Life Gut Microbiome Development**

The early-life gut microbiome is a critical determinant of immune education, metabolic programming, gut barrier integrity, and neuroendocrine signalling. Microbial colonisation begins at birth and is strongly influenced by mode of delivery, early feeding practices, antibiotic exposure, and environmental contact. These factors shape microbial composition and functional capacity during a sensitive developmental window spanning infancy and early childhood.

This report interprets results using a developmentally informed framework, recognising that there is no single “normal” infant microbiome. Instead, findings are contextualised against expected microbial trajectories associated with different delivery and feeding types, with emphasis on functional capacity and maturation trends rather than isolated taxonomic findings.

Expected Microbiome Trends***Vaginal Delivery***

Early acquisition of maternal vaginal and intestinal microbiota

Typical dominance of Bifidobacterium (particularly in breastfed infants)

Earlier establishment of obligate anaerobes (e.g. Bacteroides)

Progressive reduction in Proteobacteria over time

Caesarean Delivery

Delayed microbial transfer and altered early colonisation

Reduced early Bifidobacterium and Bacteroides

Increased skin- and environment-associated taxa

Slower transition from facultative to obligate anaerobes

These patterns are considered developmental variants rather than pathological, particularly within the first year of life. Interpretation focuses on trajectory and functional development.

Breastfeeding

Selective enrichment of HMO-utilising Bifidobacterium species

Lower early microbial diversity (physiologically appropriate)

Reduced inflammatory signalling and enhanced gut barrier support

Formula Feeding

Earlier increase in microbial diversity

Reduced Bifidobacterium dominance

Greater representation of Firmicutes and Proteobacteria

Earlier establishment of adult-like microbial functions

Disclaimer: Baby/Paediatric Microbiome Tests

This report provides an analysis of the stool microbiome using shotgun metagenomic sequencing. The results reflect the microbial DNA detected in the sample at the time of collection.

The gut microbiome in infants, children, and adolescents is continuously developing and may vary considerably due to factors such as age, mode of delivery, diet, antibiotic exposure, illness, and environmental influences. Results are therefore interpreted using age-specific reference ranges developed for infant or paediatric patients aged 0-3 years or 0-17 years respectively.

This test provides supportive information about gut microbial composition and should be interpreted alongside clinical history, symptoms, diet, and other relevant investigations. The presence or absence of specific organisms does not necessarily indicate disease.

This report is not intended to diagnose medical conditions or replace medical advice. Results should be reviewed and interpreted by a qualified healthcare practitioner within the context of the patient's clinical presentation.

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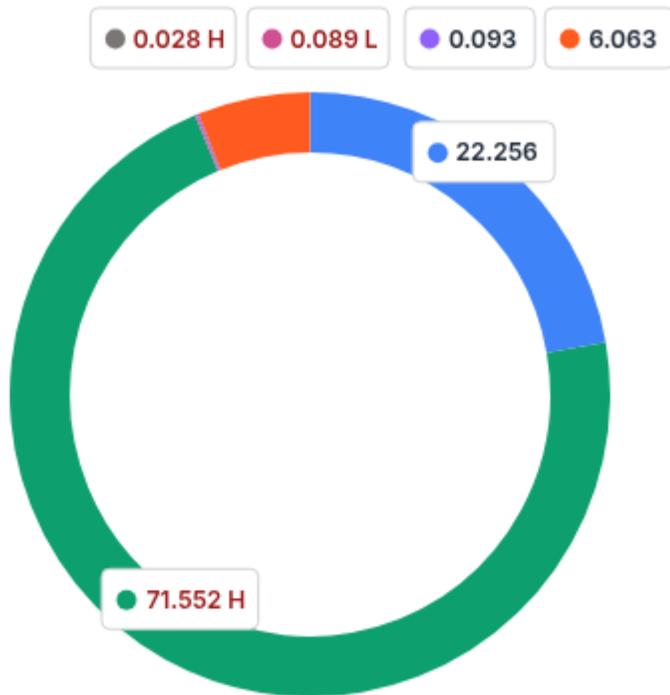
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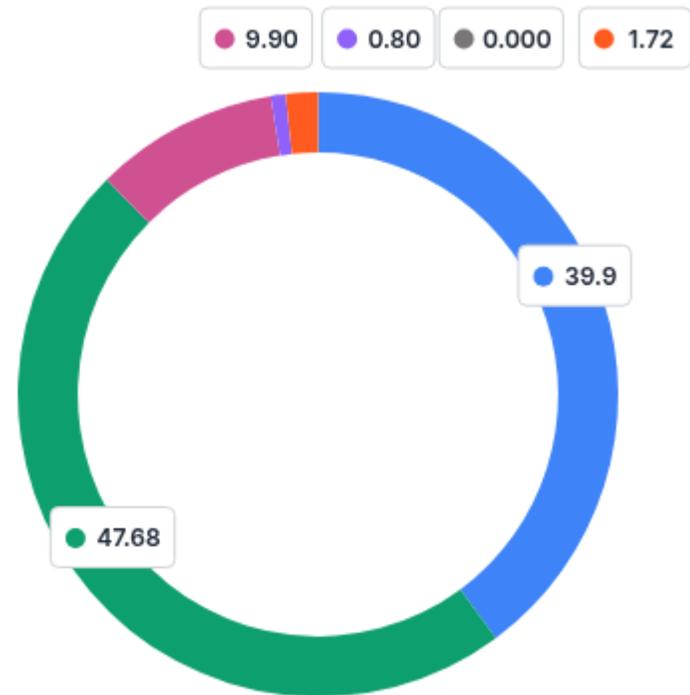
MICROBIOTA PHYLA

TEST	RESULT	H/L	REFERENCE	UNITS
Actinobacteria Phylum	0.089	L	(0.100-20.000)	%
Bacteroidetes Phylum	22.256		(20.000-55.000)	%
Euryarchaeota Phylum	0.028	H	(<0.020)	%
Firmicutes Phylum	71.552	H	(35.000-70.000)	%
Proteobacteria Phylum	6.063		(0.300-9.000)	%
Verrucomicrobia Phylum	0.093		(0.040-3.500)	%

Your Phyla



Healthy Phyla



GUT MICROBIAL DIVERSITY

TEST	RESULT	H/L	REFERENCE	UNITS
Shannon Diversity Index	4.51	H	(1.80-4.10)	
Simpson Diversity Index	0.97		(0.70-0.98)	

MICROBIOTA RATIOS

TEST	RESULT	H/L	REFERENCE	UNITS
Firmicutes/Bacteroidetes ratio	3.21		(<4.00)	ratio
Fus. nucleatum/Faec. prausnitzii ratio	N/A		(<3.00)	ratio
Gram-Positive/Gram-Negative ratio	0.16		(<2.50)	ratio
Prevotella/Bacteroides ratio	0.52	H	(<0.10)	ratio
Proteobacteria/Actinobacteria	67.87	H	(<14.00)	ratio

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PARASITES					
TEST	RESULT	H/L		REFERENCE	UNITS
Blastocystis hominis	95.00	H		(<1.00)	x10 ⁵ org/g
Cryptosporidium species	<DL			(<1.00)	x10 ⁵ org/g
Cyclospora cayetanensis	<DL			(<1.00)	x10 ⁵ org/g
Dientamoeba fragilis	2.48	H		(<1.00)	x10 ⁵ org/g
Entamoeba histolytica	<DL			(<1.00)	x10 ⁵ org/g
Enterocytozoon species	<DL			(<1.00)	x10 ⁵ org/g
Giardia intestinalis	<DL			(<1.00)	x10 ⁵ org/g

Blastocystis Subtypes	
TEST	RESULT
Subtype 1	Negative
Subtype 2	POSITIVE
Subtype 3	Negative
Subtype 4	Negative
Subtype 5	Negative
Subtype 6	Negative
Subtype 7	Negative
Subtype 8	Negative
Subtype 9	Negative

HELMINTHS	
TEST	RESULT
Ancylostoma species Hookworm	Not Detected
Ascaris species, Roundworm	Not Detected
Enterobius vermicularis, Pinworm	Not Detected
Hymenolepis spp, Tapeworm	Not Detected
Necator americanus, Hookworm	Not Detected
Strongyloides spp, Roundworm	Not Detected
Taenia species, Tapeworm	Not Detected
Trichuris trichiura, Whipworm	Not Detected

VIRUSES	
TEST	RESULT
Adenovirus 40/41	Not Detected
Astrovirus (hAstro)	Not Detected
Norovirus GI/II	Not Detected
Rotavirus A	DETECTED
Sapovirus (I,II,IV,V)	Not Detected

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BACTERIAL PATHOGENS

TEST	RESULT	H/L	REFERENCE	UNITS
Aeromonas species	<DL		(<1.00)	x10 ³ CFU/g
Campylobacter species	<DL		(<1.00)	x10 ⁵ CFU/g
C. difficile, Toxin A	<DL		(<1.00)	x10 ⁴ CFU/g
C. difficile, Toxin B	<DL		(<1.00)	x10 ⁴ CFU/g
Clostridium difficile, Hypervirulent	<DL		(<1.00)	x10 ³ CFU/g
Enterococci	<DL		(<1.00)	x10 ³ CFU/g
Enteropathogenic E. coli	0.78		(<1.00)	x10 ³ CFU/g
E. coli O157	<DL		(<1.00)	x10 ² CFU/g
Enteroinvasive E. coli/Shigella	<DL		(<1.00)	x10 ³ CFU/g
Enterotoxigenic E. coli LT/ST	<DL		(<1.00)	x10 ⁵ CFU/g
Salmonella species	<DL		(<1.00)	x10 ⁵ CFU/g
Shiga toxin-producing E. coli (stx1/2)	<DL		(<1.00)	x10 ³ CFU/g
Vibrio species	<DL		(<1.00)	x10 ⁴ CFU/g
Yersinia species	<DL		(<1.00)	x10 ⁵ CFU/g
Helicobacter pylori	<DL		(<1.00)	x10 ³ CFU/g

HELICOBACTER PYLORI PROFILE

TEST	RESULT
H. pylori Antigen	Negative

H. Pylori Virulence Factors

TEST	RESULT
Virulence Factor, babA	Not Detected
Virulence Factor, cagA	Not Detected
Virulence Factor, dupA	Not Detected
Virulence Factor, iceA	Not Detected
Virulence Factor, oipA	Not Detected
Virulence Factor, vacA	Not Detected
Virulence Factor, virB	Not Detected
Virulence Factor, virD	Not Detected

H. pylori Resistance Genes

TEST	RESULT
Resistance gene A2142C	Not Detected
Resistance gene A2142G	Not Detected
Resistance gene A2143G	Not Detected

Actinobacteria Phylum Bacteroidetes Phylum Euryarchaeota Phylum Firmicutes Phylum Proteobacteria Phylum Verrucomicrobia Phylum

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MYCOLOGY

SERVICE	RESULT	H/L	REFERENCE	UNITS
Candida albicans	<DL		(<1.00)	x10 ⁵ CFU/g
Candida dubliniensis	<DL		(<1.00)	x10 ⁵ CFU/g
Candida famata	<DL		(<1.00)	x10 ⁵ CFU/g
Candida glabrata	<DL		(<1.00)	x10 ⁵ CFU/g
Candida guilliermondii	<DL		(<1.00)	x10 ⁵ CFU/g
Candida intermedia	<DL		(<1.00)	x10 ⁵ CFU/g
Candida kefyr	<DL		(<1.00)	x10 ⁵ CFU/g
Candida krusei	<DL		(<1.00)	x10 ⁵ CFU/g
Candida lambica	<DL		(<1.00)	x10 ⁵ CFU/g
Candida lipolytica	<DL		(<1.00)	x10 ⁵ CFU/g
Candida lusitanae	<DL		(<1.00)	x10 ⁵ CFU/g
Candida parapsilosis	<DL		(<1.00)	x10 ⁵ CFU/g
Candida tropicalis	1.10	H	(<1.00)	x10 ⁵ CFU/g
Geotrichum species	<DL		(<1.00)	x10 ⁵ CFU/g
Rhodotorula species	<DL		(<1.00)	x10 ⁵ CFU/g
Saccharomyces cerevisiae	<DL		(<1.00)	x10 ⁵ CFU/g

PATHOGENS / OPPORTUNISTIC PATHOGENS

TEST	RESULT	H/L	REFERENCE	UNITS
Abiotrophia defectiva	<DL		(<0.010)	%
Acinetobacter baumannii	<DL		(<0.010)	%
Acinetobacter haemolyticus	<DL		(<0.010)	%
Acinetobacter junii	<DL		(<0.010)	%
Bacteroides caccae	0.470		(<3.000)	%
Bacteroides fragilis	<DL		(<8.000)	%
Phocaeicola vulgatus	0.431		(<11.000)	%
Bilophila wadsworthia	0.068		(<0.300)	%
Citrobacter freundii	<DL		(<0.500)	%
Citrobacter koseri	<DL		(<0.010)	%
Citrobacter youngae	<DL		(<0.010)	%
Corynebacterium urealyticum	<DL		(<0.010)	%
Desulfovibrio piger	<DL		(<0.120)	%
Enterobacter cloacae	<DL		(<0.100)	%
Enterococcus casseliflavus	0.002		(<0.010)	%
Enterococcus faecalis	<DL		(<1.000)	%
Enterococcus faecium	<DL		(<0.010)	%

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TEST	RESULT	H/L	REFERENCE	UNITS
● Enterococcus gallinarum	<DL		(<0.010)	%
● Escherichia coli	0.016		(<4.000)	%
● Fusobacterium nucleatum	<DL		(<0.010)	%
● Fusobacterium ulcerans	<DL		(<0.010)	%
● Klebsiella oxytoca	<DL		(<0.050)	%
● Klebsiella pneumoniae	0.110		(<0.200)	%
● Methanobrevibacter smithii	0.027	H	(<0.020)	%
● Morganella morganii	<DL		(<0.010)	%
● Proteus mirabilis	<DL		(<0.010)	%
● Providencia rettgeri	<DL		(<0.010)	%
● Pseudoflavonifractor capillosus	0.035	H	(<0.030)	%
● Pseudomonas aeruginosa	<DL		(<0.200)	%
● Staphylococcus aureus	<DL		(<0.500)	%
STREPTOCOCCUS TOTAL	0.095		(<0.100)	%
● Streptococcus agalactiae	<DL		(<0.010)	%
● Streptococcus anginosus	<DL		(<0.010)	%
● Streptococcus dysgalactiae	<DL		(<0.010)	%
● Streptococcus mutans	<DL		(<0.010)	%
● Streptococcus pyogenes	<DL		(<0.010)	%
● Streptococcus salivarius	0.095	H	(<0.050)	%
● Streptococcus suis	<DL		(<0.010)	%
● Veillonella parvula	<DL		(<0.200)	%

● Actinobacteria Phylum ● Bacteroidetes Phylum ● Euryarchaeota Phylum ● Firmicutes Phylum ● Proteobacteria Phylum ● Verrucomicrobia Phylum

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BENEFICIAL BACTERIA / PROBIOTICS

SERVICE	RESULT	H/L	REFERENCE	UNITS
Akkermansia muciniphila	0.012		(<3.500)	%
Bacteroides thetaiotaomicron	0.092		(<5.000)	%
Bacteroides uniformis	0.437		(<10.000)	%
BIFIDOBACTERIUM TOTAL	0.011		(0.010-20.000)	%
Bifidobacterium adolescentis	<DL		(<0.700)	%
Bifidobacterium animalis	0.011		(<0.100)	%
Bifidobacterium bifidum	<DL		(<12.000)	%
Bifidobacterium breve	<DL		(<10.000)	%
Bifidobacterium longum	<DL		(<15.000)	%
Bifidobacterium pseudolongum	<DL		(<0.500)	%
Clostridium butyricum	<DL		(<0.005)	%
Faecalibacterium prausnitzii	5.130		(1.000-14.000)	%
LACTOBACILLUS TOTAL	0.0020		(<3.0000)	%
Lactobacillus acidophilus	0.001		(<0.150)	%
Lactobacillus casei paracasei	0.001		(<0.150)	%
Lactobacillus crispatus	<DL		(<0.060)	%
Lactobacillus delbrueckii	<DL		(<0.060)	%
Lactobacillus fermentum	<DL		(<1.000)	%
Lactobacillus gasseri	<DL		(<0.300)	%
Lactobacillus helveticus	<DL		(<0.150)	%
Lactobacillus johnsonii	<DL		(<0.150)	%
Lactobacillus plantarum	<DL		(<0.150)	%
Lactobacillus reuteri	<DL		(<0.150)	%
Lactobacillus rhamnosus	<DL		(<0.150)	%
Lactobacillus salivarius	<DL		(<0.150)	%
Lactococcus lactis.	0.007		(<0.030)	%
Oxalobacter formigenes	<DL		(<0.100)	%
Pediococcus acidilactici	2.000	H	(<0.090)	%
Pediococcus pentosaceus	<DL		(<0.060)	%
Roseburia hominis	0.024		(0.010-0.300)	%
Roseburia intestinalis	<DL		(<0.500)	%
Roseburia inulinivorans	0.065		(0.000-0.500)	%
Streptococcus thermophilus	<DL		(<1.000)	%

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28-Feb-26**Macroscopy Comment****FAECAL OCCULT BLOOD NEGATIVE:**

Faecal occult blood has not been detected in this specimen. If the test result is negative and clinical symptoms persist, additional follow-up testing using other clinical methods is recommended.

FORMED STOOL:

A FORMED stool specimen classified as Type 1-3 on the Bristol Stool Chart may indicate slow colonic transit and inadequate water content, commonly associated with constipation. This can result from low dietary fibre intake, insufficient hydration, reduced gut motility, or gut microbiota imbalances. Chronic constipation is often linked to conditions such as irritable bowel syndrome with Constipation (IBS-C), functional constipation, or slow-transit constipation, which may be influenced by neurological, hormonal, or lifestyle factors. Clinical recommendations include increasing dietary fibre intake (particularly soluble fibre from fruits, vegetables, and whole grains), maintaining adequate hydration (at least 1.5-2L of water daily), and incorporating regular physical activity to promote bowel motility. Probiotic supplementation may also support gut microbiota diversity and improve stool consistency.

MUCOUS PRESENT:

Marker Type: Visual stool inflammatory marker

Age group: 0-3 years

What this represents at this age:

Visible mucous reflects increased mucin secretion from goblet cells in response to irritation or immune activation. In infants and toddlers, mucous can be seen during viral infections, food protein sensitivity, teething-associated GI shifts, or transient dysbiosis.

Clinical significance:

Mild mucous may be transient and benign. Persistent or heavy mucous, especially with diarrhoea or blood, suggests mucosal irritation or inflammation.

Clinical interpretation note:

Interpret alongside calprotectin, occult blood, infection markers, and recent dietary changes.

Suggestions:

- Correlate with stool frequency and consistency
- Review recent infections or dietary transitions
- Monitor if persistent

FAECAL TRANSGLUTAMINASE IgA: Negative

Tissue Transglutaminase is the most specific test for Coeliac Disease. Levels less than 100 are considered NEGATIVE.

Treatment:

No treatment required. However, If there is clinical suspicion of Coeliac disease consider testing serum Coeliac markers. Also assess IgG/IgA Food sensitivity tests to identify specific food intolerances.

ACCREDITATION SCOPE: Please note that the above test is currently not under the laboratory's scope of accreditation.

STOOL pH LOW (Acidic):

Marker Type: Fermentation balance indicator

Age group: 0-3 years

What this represents at this age:

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Stool pH reflects the balance between carbohydrate fermentation (which produces short-chain fatty acids and lowers pH) and protein fermentation (which produces alkaline metabolites). In infants and toddlers, stool is naturally more acidic compared to adults, particularly in breastfed infants where Bifidobacterium-dominant fermentation increases acetate and lowers pH.

Clinical significance:

Mildly acidic stool is often physiological in this age group, especially under 12–18 months. However, markedly low pH may indicate carbohydrate malabsorption (e.g. post-viral lactase deficiency), rapid intestinal transit, or excessive fermentation of simple sugars. Persistent acidity accompanied by loose stools, perianal irritation, or bloating may suggest transient disaccharidase deficiency or dysbiosis.

Clinical interpretation note:

Interpret in the context of feeding type (breastfed vs formula vs mixed diet), recent viral illness, stool frequency, and SCFA profile. Acidic stool alone is not diagnostic of pathology in this age group.

Suggestions:

- Review recent illness history (post-infectious lactase deficiency common)
- Monitor stool consistency and growth trajectory
- Consider temporary lactose reduction if symptomatic
- Support microbiome maturation with age-appropriate fibre exposure (in solids phase)

Dominant Phyla Comment

ACTINOBACTERIA LOW:

Phylum: Actinomycetota (Actinobacteria)

Age group: 0–3 years

What this represents at this age:

In infancy and toddlerhood, Actinobacteria are largely represented by Bifidobacterium species, which are foundational early colonisers and key organisms for milk-carbohydrate utilisation (including HMOs) and early-life fermentation. Low Actinobacteria at this age typically reflects reduced bifidobacterial establishment and may indicate limited breastmilk exposure, early antibiotic disruption, caesarean-associated colonisation differences, early infection impacts, or a faster-than-expected shift toward a more adult-like microbiome where other phyla dominate fermentation.

Clinical interpretation note:

In 0–3 years, low Actinobacteria can be clinically meaningful, particularly if paired with low total bifidobacteria, elevated Proteobacteria, reduced diversity, or symptoms (colic, reflux, eczema/allergy tendencies, altered stooling). Interpret in context—this is often a developmental ecology signal rather than a disease marker.

Suggestions:

- Correlate with feeding history, antibiotic exposure, and recent GI infections
- Interpret alongside total bifidobacteria and Proteobacteria patterns
- Consider longitudinal tracking during weaning and after illness/antibiotics

EURYARCHAEOTA ELEVATED:

Phylum: Euryarchaeota (Archaea)

Age group: 0–3 years

What this represents at this age:

Elevated methanogenic archaea in early life may indicate earlier establishment of methanogenesis. Methanogens use hydrogen produced by bacterial fermentation, which can shift fermentation dynamics and is sometimes associated with slower transit in older individuals. In toddlers, significance is variable and strongly context-dependent.

Clinical interpretation note:

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Interpret cautiously in 0–3 years. Consider relevance primarily if constipation, bloating, or slow transit features are present, and if methane-associated organisms are elevated consistently.

Suggestions:

- Correlate with stool frequency, stool form, and constipation patterns
- Interpret alongside hydrogen-producing fermenters and overall diversity
- Consider longitudinal tracking before drawing conclusions

FIRMICUTES ELEVATED:

Phylum: Firmicutes (Bacillota)

Age group: 0–3 years

What this represents at this age:

Elevated Firmicutes in toddlers may reflect increasing anaerobic fermentation capacity and maturation of the microbiome as solid foods diversify. This phylum includes both beneficial butyrate producers and opportunistic organisms, so interpretation depends heavily on species-level composition and inflammatory context.

Clinical interpretation note:

Not inherently adverse. Interpret with species composition and symptom context. Concern increases only if elevated Firmicutes is driven by pathobiont patterns or accompanied by inflammatory markers.

Suggestions:

- Interpret with species-level breakdown (butyrate producers vs opportunists)
- Correlate with diet changes and stool pattern
- Track longitudinally during weaning

Microbial Diversity Comment

SHANNON DIVERSITY INDEX ELEVATED:

Marker type: Alpha diversity

Age group: 0–3 years

What this represents at this age:

Higher diversity may reflect broader colonisation and dietary/environmental complexity. In early life, “higher” is not always “better” and can occur with increased facultatives in disturbed states.

Clinical significance:

Non-diagnostic; quality of taxa matters more than the number of taxa.

Clinical interpretation note:

Interpret alongside whether diversity is driven by healthy anaerobes vs expansion of opportunistic taxa.

Suggestions:

Interpret composition-first; do not treat diversity as a standalone target

Microbiota Ratios Comment

PREVOTELLA / BACTEROIDES RATIO ELEVATED (Prevotella-predominant):

Marker type: Enterotype-style balance ratio (carbohydrate vs protein/fat-associated guilds)

Age group: 0–3 years

What this represents at this age:

Prevotella establishment in early life is variable and often increases with diet complexity and certain carbohydrate/fibre patterns. In infants, Prevotella signals can also reflect oral-source contributions depending on the species.

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Clinical significance:

In 0–3 years, this ratio is highly diet- and exposure-dependent and should not be over-interpreted.

Clinical interpretation note:

Interpret by examining which Prevotella species are contributing (gut-associated vs oral/urogenital-associated) and correlating with diet and symptoms.

Suggestions:

- Review species composition and dietary context
- Avoid “enterotype” labelling in infancy; track longitudinally

Mycology Comment

CANDIDA TROPICALIS ELEVATED:

Kingdom: Fungi

Age group: 0–3 years

What this represents at this age:

C. tropicalis is less common and may reflect environmental exposure or altered gut ecology following antibiotics or infection.

Clinical interpretation note:

Elevation alone does not imply pathology; consider persistence and symptoms.

Suggestions:

- Review infection history and antibiotic exposure
- Track longitudinally

Opportunistic Pathogens Comment

METHANOBREVIBACTER SMITHII ELEVATED:

Phylum: Methanobacteriota (Archaea)

Age group: 0–3 years

What this represents at this age:

M. smithii is the dominant human gut methanogen. Colonisation is often low/absent in infancy and may increase with age, dietary complexity, and a more established anaerobic ecosystem.

Clinical significance:

Higher relative abundance can indicate increased methanogenic activity and is sometimes associated with slower transit/constipation phenotypes. However, methanogen presence is variable in early life and not inherently abnormal.

Clinical interpretation note:

In 0–3 years, interpret with the clinical bowel pattern. Relevance increases if constipation, bloating, or delayed transit is a dominant clinical feature.

Suggestions:

- Correlate with stool frequency/consistency and clinical constipation phenotype
- Interpret alongside fibre-fermenting and butyrate-network taxa (which influence substrate availability)

STREPTOCOCCUS SALIVARIUS ELEVATED:

Phylum: Bacillota (Firmicutes)

Age group: 0–3 years

What this represents at this age:

Dr Test Doctor (Test Doctor) Test Clinic. 123 Test Street, Test Suburb 3125Lab ID
Patient ID P029035
Ext ID 26059-0001**Test Patient**Sex: Female • 2yrs • 01-Jan-24
123, Test Street, Burwood Victoria 3125RECEIVED
28-Feb-26

A dominant oral commensal; stool detection reflects oral-source transfer.

Clinical significance:

Usually benign and exposure-related.

Clinical interpretation note:

Not a gut-pathology marker; can rise with increased oral microbial contribution.

Suggestions:

Correlate with oral health; no gut-directed action required

PSEUDOFLOVONIFRATOR CAPILLOSUS ELEVATED:

Phylum: Bacillota (Firmicutes)

Age group: 0–3 years

What this represents at this age:

Pseudoflavonifractor capillosus is an obligate anaerobe involved in polyphenol and flavonoid metabolism and is part of the adult-type anaerobic microbiome. In early life, it is typically low or absent and increases with dietary complexity and fibre/polyphenol exposure.

Clinical significance:

Elevation in a toddler may reflect advanced anaerobic maturation or relative abundance shifts as the microbiome transitions toward a more adult-like configuration.

Clinical interpretation note:

In younger infants, elevation is uncommon and should be interpreted cautiously as a relative effect. In older toddlers (≥ 2 years), presence may be developmentally appropriate.

Suggestions:

- Interpret with age and diet (plant foods, polyphenol exposure)
- Correlate with other adult-type anaerobes and SCFA-associated taxa

Probiotics/Beneficial Bacteria Comment**PEDIOCOCCUS ACIDILACTICI ELEVATED:**

Phylum: Bacillota (Firmicutes)

Age group: 0–3 years

What this represents at this age:

Pediococcus acidilactici is a lactic acid bacterium frequently associated with fermented foods and probiotic preparations. In stool, detection commonly represents dietary/probiotic transit rather than stable colonisation, particularly in infants and toddlers.

Clinical significance:

Usually benign. Relative abundance elevation is most often explained by recent intake of probiotics or fermented products, or by relative shifts where other taxa are reduced (e.g., post-antibiotics).

Clinical interpretation note:

Interpret primarily as an exposure marker in this age group. It should not be used as a direct indicator of gut health or dysbiosis.

Suggestions:

- Confirm probiotic/fermented food exposure and timing pre-collection
- Correlate with stool symptoms only if markedly dominant
- No targeted intervention required in isolation

Parasites/Worms Comment

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28-Feb-26**DIENTAMOEBIA FRAGILIS ELEVATED:**

Organism Type: Colonic protozoan

Age group: 0–3 years

What this represents at this age:

Transmitted via the faecal–oral route and sometimes associated with helminth ova (notably Enterobius). It colonises the large intestine and may influence gut motility and local immune signalling.

Clinical significance:

Pathogenicity is variable in toddlers. It may contribute to intermittent loose stools, abdominal discomfort, irritability, or disturbed sleep. Often detected in daycare settings.

Clinical interpretation note:

Interpret in conjunction with symptoms, inflammatory markers, and possible pinworm co-infection.

Suggestions:

- Treat if symptomatic
- Screen for Enterobius co-infection
- Support microbiome diversity post-treatment

BLASTOCYSTIS HOMINIS ELEVATED:

Organism Type: Anaerobic colonic protozoan

Age group: 0–3 years

What this represents at this age:

Blastocystis is transmitted via faecal–oral exposure and is common in shared childcare environments. It inhabits the large intestine and interacts with the existing microbiome. Strain-dependent pathogenicity is recognised.

Clinical significance:

In toddlers, it may represent microbial immaturity or environmental exposure rather than overt infection. However, in the context of elevated calprotectin, altered stool form, or eczema/allergic tendency, it may contribute to immune activation and gut barrier permeability.

Clinical interpretation note:

Interpret alongside inflammatory markers, stool form, and overall microbial diversity.

Suggestions:

- Observe if asymptomatic
- Consider treatment if persistent GI symptoms
- Address gut barrier integrity if clinically indicated

Viral Pathogens Comment**ROTAVIRUS ELEVATED:**

Organism Type: Double-stranded RNA virus (severe paediatric gastroenteritis virus)

Age group: 0–3 years

What this represents at this age:

Rotavirus infects small intestinal enterocytes and leads to villous atrophy, enzyme disruption, and secretory diarrhoea. Vaccination has significantly reduced severe disease, but infection may still occur.

Clinical significance:

Historically a major cause of severe diarrhoea and dehydration in infants. Can cause high stool output, vomiting, fever, and risk of electrolyte imbalance. Temporary lactose intolerance is common post-infection.

Clinical interpretation note:

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Clinically significant in symptomatic toddlers. Severity depends on vaccination status and host factors.

Suggestions:

- Immediate hydration focus
- Monitor for signs of dehydration
- Temporary lactose reduction if ongoing diarrhoea
- Rebuild microbiome diversity post-recovery

Methodology

Automated Chemistry/Immunochemistry, Chemiluminescence Immunoassay (CLIA), Enzyme-Linked Immunosorbent Assay (ELISA), Microscopy, Fluorescence Enzyme Immunoassay (FEIA), pH Electrode, Gas Chromatography-MS (GC/MS), Metagenomic Next Generation Sequencing (mNGS), Quantitative PCR (qPCR), Polymerase Chain Reaction (PCR)