



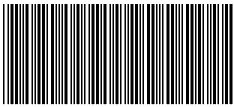
NUTRIPATH • PATIENT REPORT

16 Harker St, Burwood VIC, 3125 • info@nutripath.com.au • 1300 688 522



RCPA  
The Royal College of Pathologists of Australasia

NATA Accreditation: #20770



25272-0001

Dr Test Doctor    Test Clinic. 123 Test Street, Test Suburb Victoria 3125

Lab ID  
Patient ID PAT-100009  
Ext ID 25272-0001

Test Patient

Sex: Female • 45yrs • 01-Jan-80  
123 Home Street, Test Suburb Vic 3125

RECEIVED  
29-Sep-25

MICROBIOME REVIEW

Specimen type - Stool

Collected

26-Sep-25

MACROSCOPIC EXAMINATION

TEST	RESULT
Stool Colour	Brown
Stool Form	Semiformed
Mucous	Absent

OCCULT BLOOD

TEST	INTERPRETATION
Occult Blood	POSITIVE

Parasites & Worms

Giardia intestinalis  
Ascaris species, Roundworm

Bacteria & Viruses

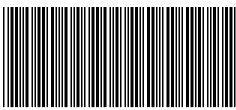
Streptococcus oralis  
Methanobrevibacter smithii  
Desulfovibrio piger  
Pseudomonas aeruginosa  
Campylobacter species  
Klebsiella pneumoniae complex  
Fusobacterium species  
Helicobacter pylori  
Rotavirus A

Mycology

Candida parapsilosis  
Candida albicans

MICROBIOTA RATIO

TEST	RESULT	H/L		REFERENCE	UNITS
Firmicutes/Bacteroidetes Ratio	1.91	H	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	(<1.00)	ratio



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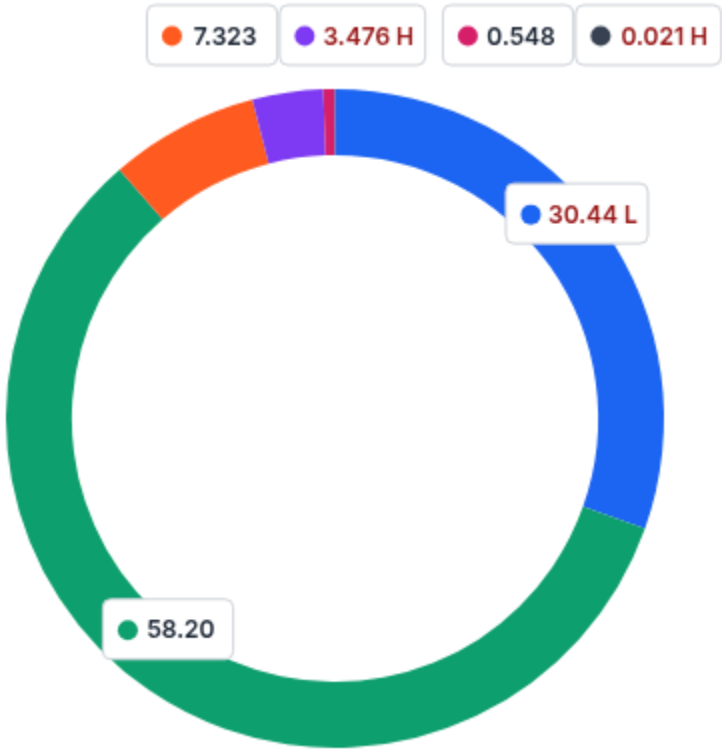
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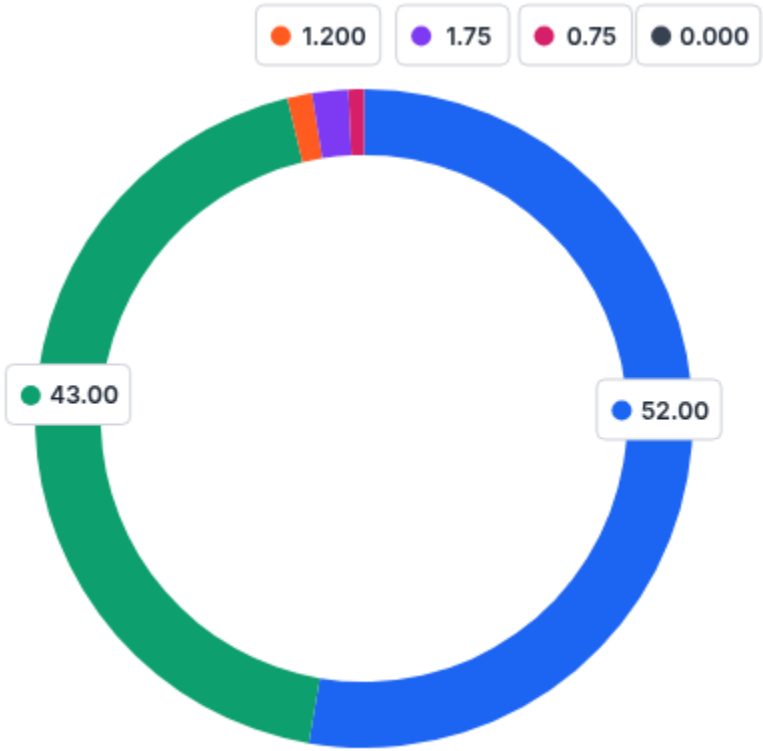
COMMENSAL RELATIVE ABUNDANCE

TEST	RESULT	H/L		REFERENCE	UNITS
Actinobacteria Phylum	0.548		<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	(0.001-1.500)	%
Bacteroidetes Phylum	30.44	L	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	(40.00-87.00)	%
Euryarchaeota Phylum	0.021	H	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	(0.000-0.010)	%
Firmicutes Phylum	58.20		<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	(10.00-60.00)	%
Proteobacteria Phylum	7.323		<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	(0.500-5.000)	%
Verrucomicrobia Phylum	3.476	H	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	(0.000-2.400)	%

Your Phyla



Healthy Phyla





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TEST	RESULT	H/L	REFERENCE	UNITS
Blastocystis hominis	<DL		(<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	<DL		(<1.00)	x10^5 org/g
Entamoeba histolytica	<DL		(<1.00)	x10^5 org/g
Giardia intestinalis	1.0	H	(<1.00)	x10^5 org/g
Enterocytozoon species	<DL		(<1.00)	x10^5 org/g

TEST	RESULT
Ancylostoma species Hookworm	Not Detected
Ascaris species, Roundworm	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

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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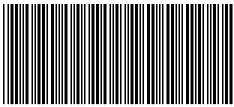


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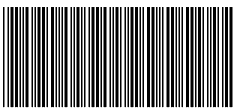
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NORMAL BACTERIAL GUT FLORA

TEST	RESULT	H/L		REFERENCE	UNITS
Akkermansia muciniphila	118.00	H		(1.00-50.00)	x10^7 CFU/g
TOTAL BIFIDOBACTERIA	10.00			(<2000.00)	x10^6 CFU/g
Bifidobacterium adolescentis	2.00			(<1000.00)	x10^6 CFU/g
Bifidobacterium bifidum	<DL			(<1000.00)	x10^6 CFU/g
Bifidobacterium breve	5.00			(<1000.00)	x10^6 CFU/g
Bifidobacterium longum	3.00			(<1000.00)	x10^6 CFU/g
Clostridium species	114.70	H		(5.00-50.00)	x10^7 CFU/g
Enterococcus species	56.50			(1.90-2000.00)	x10^3 CFU/g
Escherichia species	5385.00	H		(3.70-3800.00)	x10^4 CFU/g
Faecalibacterium prausnitzii	890.00			(100.00-3500.00)	x10^6 CFU/g
TOTAL LACTOBACILLI	4.90			(<3000.00)	x10^3 CFU/g
Lactobacillus acidophilus	3.00			(<500.00)	x10^3 CFU/g
Lactobacillus casei	<DL			(<500.00)	x10^3 CFU/g
Lactobacillus delbrueckii	<DL			(<500.00)	x10^3 CFU/g
Lactobacillus plantarum	<DL			(<500.00)	x10^3 CFU/g
Lactobacillus rhamnosus	1.90			(<500.00)	x10^3 CFU/g
Lactobacillus salivarius	<DL			(<500.00)	x10^3 CFU/g
Oxalobacter formigenes	5.69			(<50.00)	x10^6 CFU/g

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





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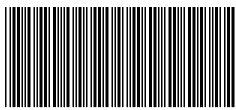
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The Four “R” Treatment Protocol

REMOVE	Using a course of antimicrobial, antibacterial, antiviral or anti parasitic therapies in cases where organisms are present. It may also be necessary to remove offending foods, gluten, or medication that may be acting as antagonists.  Consider testing IgG96 foods as a tool for removing offending foods.	ANTIMICROBIAL	Oil of oregano, berberine, caprylic acid
		ANTIBACTERIAL	Liquorice, zinc carnosine, mastic gum, tribulus, berberine, black walnut, caprylic acid, oil of oregano
		ANTIFUNGAL	Oil of oregano, caprylic acid, berberine, black walnut
		ANTIPARASITIC	Artemesia, black walnut, berberine, oil of oregano
		ANTIVIRAL	Cat's claw, berberine, echinacea, vitamin C, vitamin D3, zinc, reishi mushrooms
		BIOFILM	Oil of oregano, protease
REPLACE	In cases of maldigestion or malabsorption, it may be necessary to restore proper digestion by supplementing with digestive enzymes.	DIGESTIVE SUPPORT	Betaine hydrochloride, tilactase, amylase, lipase, protease, apple cider vinegar, herbal bitters
REINOCULATE	Recolonisation with healthy, beneficial bacteria. Supplementation with probiotics, along with the use of prebiotics helps re-establish the proper microbial balance.	PREBIOTICS	Slippery elm, pectin, larch arabinogalactans
		PROBIOTICS	Bifidobacterium animalis sup lactose, lactobacillus acidophilus, lactobacillus plantarum, lactobacillus casei, bifidobacterium breve, bifidobacterium bifidum, bifidobacterium longum, lactobacillus salivarius sup salivarius, lactobacillus paracasei, lactobacillus rhamnosus, Saccaromyces boulardii
REPAIR & REBALANCE	Restore the integrity of the gut mucosa by giving support to healthy mucosal cells, as well as immune support. Address whole body health and lifestyle factors so as to prevent future GI dysfunction.	INTESTINAL MUCOSA IMMUNE SUPPORT	Saccaromyces boulardii, lauric acid
		INTESTINAL BARRIER REPAIR	L-Glutamine, aloe vera, liquorice, marshmallow root, okra, quercetin, slippery elm, zinc carnosine, Saccaromyces boulardii, omega 3 essential fatty acids, B vitamins
		SUPPORT CONSIDERATION	Sleep, diet, exercise, and stress management





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### Phyla Microbiota Comment

#### EURYARCHAEOTA (PHYLUM) ELEVATED:

DESCRIPTION: Euryarchaeota are a phylum of a diverse range of bacteria, including methanogens, halophiles and sulfate-reducers. Three distinct species within the group of Euryarchaeota have been regularly detected within the human body. Among these is the primary colonizer of the human gut system *Methanobrevibacter smithii* and the less frequently found species *Methanosphaera stadtmanae*, while in the oral cavity *M. oralis* is the predominating methanogenic species. Methanogens support the growth of fermenting bacteria, which themselves could be either true pathogens or at least opportunistic pathogens but also members of the commensal flora. They may also transform heavy metals or metalloids into volatile methylated derivatives which are known to be more toxic than the original compounds. Elevated Euryarchaeota may be associated with inflammatory bowel disease, Crohn's, irritable bowel syndrome, colorectal cancer, diverticulosis, and obesity. It may also affect short chain fatty acid production and absorption.

TREATMENT SUGGESTIONS: If treatment is warranted, Statins may be used to inhibit methanogenic archaea growth without affecting bacterial numbers. Symptoms may also be treated with dietary modification (low FODMAP) and probiotics. A lactulose SIBO test may be considered to assess Methanogen levels.

#### VERRUCOMICROBIA (PHYLUM) ELEVATED:

DESCRIPTION: Verrucomicrobia is a phylum of Gram-negative bacteria that contains only a few described species, found in the environment and gastrointestinal tract. *Akkermansia* spp. is involved in gut membrane integrity and may be increased with polyphenols and prebiotics. Verrucomicrobia aid in glucose homeostasis of the human gut and have anti-inflammatory properties that further aid in intestinal health.

TREATMENT SUGGESTIONS: Probiotic use and dietary modification use may assist in the rebalancing of microbial flora.

#### FIRMICUTES/BACTEROIDETES RATIO ELEVATED:

Elevated Firmicutes/Bacteroidetes ratio is frequently cited in the scientific literature as a hallmark of obesity, metabolic syndrome, irritable bowel syndrome or diabetes risk. The ratio may also be used to evaluate commensal microbial balance. The calculation provided in this report is made by the sum of abundance of Firmicutes tested divided by the sum of abundance Bacteroidetes. Reference ranges are based off internal cohort studies.

TREATMENT SUGGESTIONS: Balance commensal bacteria using the 4R Protocol which is located at the end of this test report. When firmicutes are high, consider using *Bifidobacterium* probiotics and *Saccharomyces boulardii* primarily. *Lactobacillus* spp. and *Bacillus* spp. (found in probiotics) can elevate firmicutes. It is further suggested to optimize the patient diet. A lower fat diet may assist to normalize the F/B ratio.

### Parasites/Helminths Comment

#### ELEVATED GIARDIA LEVEL:

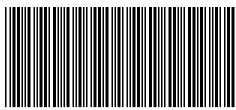
*Giardia intestinalis* is a protozoan parasite occurring worldwide, especially common in areas with poor sanitary conditions and insufficient water. Clinical presentation ranges from asymptomatic carriage to acute and chronic giardiasis (including sudden onset of diarrhoea, malaise, steatorrhea, abdominal cramps, bloating, flatulence, nausea, weight loss, vomiting and fever). Treatment of patients with asymptomatic passage of giardia is not necessary.

TREATMENT SUGGESTIONS: For symptomatic patients, treatments include; Tinidazole (child: 50mg/kg up to) 2g orally, as one dose. or Metronidazole (child: 30mg/kg up to) 2g orally, daily for 3 days. or If the above treatment fails, a longer course of metronidazole is sometimes required. Metronidazole (child: 10mg/kg up to) 400mg orally, 8-hourly for 7 days. Rule out allergy to above medication before prescribing/taking. Consult ID specialist if patient is showing severe symptoms or immunocompromised.

PLEASE NOTE: Giardia detection has been confirmed through a secondary PCR test. Giardia is a Notifiable Disease in ACT, WA, TAS and NSW. If Applicable: This result has been notified to the Department of Health.

NOTIFICATION BY THE REFERRING PRACTITIONER may also be required under the Public Health and Wellbeing Act 2009.

#### ASCARIS SPECIES (Roundworm) DETECTED:



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Ascaris species (including A. lumbricoides and A. suum) are the most common parasitic roundworm in humans. Hosts may be asymptomatic, causing only malnutrition and growth retardation or present with severe gastrointestinal (abdominal pain, nausea, vomiting, bloating or diarrhoea) or lung symptoms (fever, cough or wheezing). Adult worms can also migrate causing cholecystitis, cholangitis, pancreatitis, small bowel obstruction or appendicitis. Infection occurs via ingestion of eggs, usually found in stool-contaminated soil.

### TREATMENT SUGGESTIONS:

Effective treatments include Albendazole or Mebendazole single oral dose. Rule out allergy to above medication before prescribing/taking. Can repeat dose after 4-6 weeks. Whole family to be treated simultaneously. Hand hygiene and washing bedding /clothes in hot water cycle is recommended to prevent recurrence. A repeat test should be suggested post therapy.

## Viral Pathogens Comment

### ROTAVIRUS DETECTED:

DESCRIPTION: Rotavirus is a very contagious viral illness and transmission is via the faecal-oral route, usually through direct contact between people. Common cause of childhood diarrhoea eosinophilic gastroenteritis. neonates and infants, Childcare outbreaks are common. Symptoms include foul smelling green watery stools (diarrhoea), abdominal pain, low-grade fever, irritable and dehydration. Short-lived, lasting about 24-72 hours. A repeat test for Enteric Viral Pathogens should be requested to ensure that the virus has cleared.

### TREATMENT SUGGESTIONS:

Conservative hygiene measures such as handwashing, Hydration and strict isolation is recommended for cases as such.

**PLEASE NOTE: Rotavirus detection has been confirmed through a secondary PCR test. Rotavirus is a Notifiable Disease. This result has been notified to the Department of Health.**

**NOTIFICATION BY THE REFERRING PRACTITIONER may also be required under the Public Health and Wellbeing Act 2009.**

## Bacterial Pathogens Comment

### CAMPYLOBACTER SPECIES ELEVATED: PHYLUM: Proteobacteria

DESCRIPTION: Campylobacter species are a common cause of acute self-limiting diarrhoea. Antibiotic therapy is recommended in severe or prolonged cases or high-risk patients, like: Food handlers/Health-care workers/Child-care workers/Pregnancy/Immunocompromised. Poultry is a key source of infection, in particular chicken. Red meat and shellfish can also harbor the organism. Other sources include unpasteurized milk, and water contaminated by wild birds. Symptoms can include fever, abdominal cramping, diarrhea (often bloody) abdominal pain and fever. Relapses may occur in 5%-10% of untreated cases.

TREATMENT SUGGESTIONS: Mild cases can be self-limiting. For severe/high risk patients, treatments include: Azithromycin 500mg orally, daily for 3 days. (Child: 10 mg/kg up to 500mg) Or Ciprofloxacin 500mg orally, 12 hourly for 3 days. (Child: 12.5 mg/kg up to 500mg) Or Rule out allergy to above medication before prescribing/taking. Consult ID specialist if patient is showing severe symptoms or immunocompromised.

**PLEASE NOTE: Detection has been confirmed through a secondary PCR test. Campylobacter is a Notifiable Disease. This result has been notified to the Department of Health.**

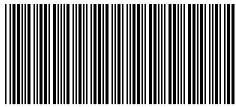
**NOTIFICATION BY THE REFERRING PRACTITIONER may also be required under the Public Health and Wellbeing Act 2009.**

### HELICOBACTER PYLORI ELEVATED: PHYLUM: Proteobacteria

DESCRIPTION: Helicobacter pylori is a gram-negative bacterium found on the luminal surface of the gastric epithelium. An elevated result indicates a current infection and is not affected by the presence of other organisms, antacids, barium sulphate, blood or fat. Please correlate infection clinically with signs and symptoms.

TREATMENT: Triple therapy: PPI, clarithromycin and amoxicillin or metronidazole, 7-14 days. If penicillin allergic: PPI, clarithromycin and clindamycin or metronidazole, 7-14 days. If the patient is asymptomatic consider other alternative therapies including:

- o Black currant seed oil and fish oil
- o Lactobacillus Probiotics
- o Vitamin C



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o Mastic gum.

H. Pylori Virulence Factor,babA DETECTED:

Blood Group Antigen Binding Adhesion (BabA) promotes DNA breakage in host cell, Improves H. pylori adherence ("stickiness") to epithelial cells and can promote other virulence factors, especially CagA.

Treatment: More aggressive treatment may be warranted; consider the use of adhesion inhibitions.

### Opportunistic Bacteria Comment

PSEUDOMONAS AERUGINOSA ELEVATED: PHYLUM: Proteobacteria

DESCRIPTION: Pseudomonas aeruginosa is a gram-negative, aerobic, non-spore forming bacteria that can cause a variety of infections in both immunocompetent and immunocompromised hosts. It is commonly found in the environment, particularly in freshwater, hot tubs, and swimming pools. Chronic gastrointestinal colonization is acknowledged to be an important component of P. aeruginosa diarrheal disease and systemic infections. Since disruption of the normal flora by antibiotics can reduce colonization resistance and promote pathologic colonization with P. aeruginosa, enterocolitis due to P. aeruginosa may also be considered to be an antibiotic-associated gastroenteritis. Pseudomonas aeruginosa in the gastrointestinal tract can cause inflammation, epithelial barrier dysfunction, tight cell junction interruption, and intestinal permeability.

TREATMENT SUGGESTIONS: If treatment is warranted, Pseudomonas is usually susceptible to antipseudomonal penicillins, aminoglycosides, carbapenems, 3rd generation cephalosporins and gentamycin. Plant-derived anti-biofilm products identified against P. aeruginosa include alkaloids, organosulfur compounds, flavonoids, phenolic compounds and terpenoids. Rule out allergy to above medication before prescribing/taking.

STREPTOCOCCUS ORALIS ELEVATED: PHYLUM: Firmicutes

DESCRIPTION: Streptococcus oralis is a Gram-positive bacterium in the gut and oral microbiome, part of the Streptococcus mitis group. In the gut, S. oralis is part of the complex microbial community that supports digestive health. However, in immunocompromised individuals or those with disrupted microbiomes, S. oralis can become an opportunistic pathogen.

METHANOBREVIBACTER SMITHII ELEVATED: PHYLUM: Euryarchaeota

DESCRIPTION: Methanobrevibacter smithii is a methane-producing microbe that plays an important role in the gut ecosystem by facilitating carbohydrate fermentation and production of short-chain fatty acids by commensal bacteria. Elevated levels may be associated with abdominal bloating, constipation, flatulence, inflammatory bowel disease (IBD), irritable bowel syndrome (IBS), colorectal cancer, diverticulosis or obesity and often correlate with a positive SIBO test. Methanobrevibacter smithii has also been closely correlated with the presence of Blastocystis hominis.

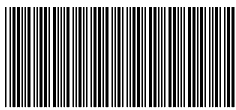
TREATMENT SUGGESTIONS: Elimination of methanogenic flora using antibiotic treatment may contribute to therapeutic benefits and include neomycin or rifaximin. Antimicrobial herbs may also be beneficial in treatment (including garlic and oregano). Rule out allergy to above medication before prescribing/taking.

DESULFOVIBRIO PIGER ELEVATED: PHYLUM: Proteobacterium

DESCRIPTION: Desulfovibrio piger is part of a group called sulfate-reducing bacteria (SRB) and are normal inhabitants of the intestine. Sulfate is present in different concentrations in the intestine dependent on diet. Remnants not absorbed, alongside the presence of lactate, promote the growth of SRB. Desulfovibrio Piger has been implicated in gastrointestinal disorders such as ulcerative colitis via the reduction of sulfate to hydrogen sulfide in the gut. High Delsulfovibrio piger levels may be associated with diarrhea or inflammatory bowel disease.

TREATMENT SUGGESTIONS: Treatment options include lowering the intake of sulfate rich foods such as some breads, dried fruits, beers, ciders and wines. It is also suggested to avoid foods high in fat.

### Potential Autoimmune Comment



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FUSOBACTERIUM SPECIES ELEVATED: PHYLUM: Fusobacteriota

DESCRIPTION: Fusobacterium species are gram-negative bacteria and are common members of the human oral and faecal microbiome. It has been demonstrated to promote the release of intestinal inflammatory factors and disrupt the intestinal barrier function. As such F. nucleatum elevation may contribute to the etiology of some gastrointestinal disorders, such as appendicitis, colon cancer, and inflammatory bowel disease (IBD). It may also induce an increase in secretory IgA and a decrease in beneficial bacteria levels such as Lactobacillus. Review this level with faecal calprotectin.

TREATMENT SUGGESTIONS: If treatment is warranted, effective antibiotics may include metronidazole or erythromycin. The use of herbal antimicrobials (Tea polyphenols- green and black tea extracts and peppermint) and probiotic treatment may also be effective. Rule out allergy to above medication before prescribing/taking.

KLEBSIELLA PNEUMONIAE COMPLEX ELEVATED: PHYLUM: Proteobacteria

DESCRIPTION:

Klebsiella pneumoniae is a gram-negative, encapsulated, non-motile bacterium found in the environment and typically colonizes human mucosal surfaces of the oropharynx and gastrointestinal tract. Increased colonisation causes insult to the intestinal mucosa via the secretion of toxins and subsequent inflammatory response that may lead to inflammation-related gastrointestinal diseases. It is typically associated with diseases related to upper respiratory tract infection; however, elevated levels may be associated with gastrointestinal diseases such as Irritable bowel disease, Crohn's and ulcerative colitis.

TREATMENT SUGGESTIONS:

Treating K. pneumoniae infections is difficult due to the increased emergence in resistant strains and if treatment is warranted, a combination of antibiotics may be used. Klebsiella appears to thrive in individuals on a high starch diet. Avoiding carbohydrates such as rice, potatoes, flour products and sugary foods may reduce the amount of Klebsiella in the gut. The use of herbal antimicrobials oregano (Origanum vulgare), sage (Salvia officinalis) or thyme (Thymus vulgaris) may also be effective.

## Mycology Comment

CANDIDA ALBICANS ELEVATED: PHYLUM: Ascomycota

DESCRIPTION: Candida albicans is a genus of yeasts found in the environment and present in healthy persons colonizing the oropharyngeal, oesophageal, and gastrointestinal mucosa. Considered an opportunistic pathogen, C. albicans can cause superficial but also more severe systemic infections. Candidiasis is an opportunistic infection due to Candida, which can affect the oral cavity, vagina, penis, or gastrointestinal tract. Elevated Candida gastrointestinal colonization is associated with several diseases including Crohn's and inflammatory bowel disease as well as with antibiotic usage. Other common symptoms include: Gas, bloating, constipation, nausea and skin conditions such as Eczema.

TREATMENT SUGGESTIONS: Dietary: Reduce intake of sugars, starches, and fungi. Candida infections may be treated if warranted with antifungal medications such as nystatin, clotrimazole, amphotericin B or miconazole. Probiotic Lactobacillus treatment may also be effective. Rule out allergy to above medication before prescribing/taking.

CANDIDA PARAPSILOSIS ELEVATED:

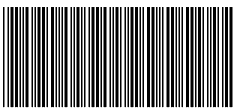
Candida parapsilosis is a yeast species that is part of the normal human microbiota but can become opportunistic under certain conditions. Overgrowth of C. parapsilosis in the gut can disrupt the microbial balance and lead to symptoms such as bloating, gas, and diarrhea. In immunocompromised individuals, C. parapsilosis is a potential pathogen and has been linked to invasive infections, though gastrointestinal symptoms are more common in cases of mild dysbiosis. When elevated guided susceptibility testing should be considered.

## Normal Bacterial Flora Comment

BACTEROIDES FRAGILIS LOW: PHYLUM: Bacteroidetes

DESCRIPTION: Bacteroides fragilis is an anaerobic, Gram-negative bacterium. It is part of the normal microbiota of the human colon and is generally commensal. Bacteroides fragilis plays an intricate role in the human colon and usually has a beneficial relationship with the host.





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Low Bacteroides fragilis levels have been associated with inflammatory bowel disease and Crohn's.

TREATMENT SUGGESTIONS: Treatment may involve the use of probiotics and dietary modification.

### BIFIDOBACTERIUM ADOLESCENTIS LOW:    PHYLUM: Actinobacteria

DESCRIPTION: Bifidobacterium adolescentis is an anaerobic species of bacteria found in the gastrointestinal tracts of humans. It is one of the most abundant and prevalent Bifidobacterium species commonly found in adults. It contributes to the production of GABA, a neurotransmitter that plays a role in reducing stress and anxiety. Some strains can synthesise B vitamins, such as folic acid. B. adolescentis enhances the growth of all bifidobacteria.

TREATMENT SUGGESTIONS: Consider a probiotic supplement containing B. adolescentis and consuming prebiotic-rich foods like garlic, onions, and whole grains. Increase dietary fibre from fruits, vegetables, and legumes, and incorporate fermented foods such as yogurt and kefir.

### BIFIDOBACTERIUM BIFIDUM LOW:    PHYLUM: Actinobacteria

DESCRIPTION: Bifidobacterium bifidum is a Gram-positive, anaerobic bacterium integral to the human gut microbiota, especially in infants. It ferments a variety of carbohydrates, including human milk oligosaccharides, aiding in digestion, and promoting a healthy gut flora. B. bifidum produces short-chain fatty acids that lower gut pH and inhibit pathogenic bacteria while supporting intestinal cells. It also modulates the immune system, enhancing immune responses and reducing inflammation, and strengthens the intestinal barrier. Clinically, B. bifidum has shown promise in alleviating gastrointestinal disorders.

### BIFIDOBACTERIUM LONGUM LOW:    PHYLUM: Actinobacteria

DESCRIPTION: Bifidobacterium longum is a Gram-positive, catalase-negative, rod-shaped bacterium present in the human gastrointestinal tract and one of the Bifidobacterium species. It can induce and regulate immune responses, reduce the expression of inflammatory cytokines, and maintain the normal intestinal barrier function. Bifidobacterium longum is a clinically effective, well-established, multifunctional probiotic that has a long history of human use in alleviating gastrointestinal, immunological, and infectious diseases such as constipation, antibiotic associated diarrhoea, irritable bowel syndrome and ulcerative colitis. Low levels may be associated with irritable bowel syndrome, asthma, autism, depressive disorder and with pathogenic bacteria infection.

TREATMENT SUGGESTIONS: Treatment may involve the use of Bifidobacterium longum containing probiotics and treatment of any intestinal infections.

### ESCHERICHIA SPECIES ELEVATED:    PHYLUM: Proteobacteria

DESCRIPTION: Escherichia is a genus of Gram-negative, non-spore-forming, facultatively anaerobic, rod-shaped bacteria and normal inhabitants of the gastrointestinal tract. Species include E. albertii, E. fergusonii, E. hermannii, E. marmotae and most notably E. coli. High levels may be indicative of increased intestinal inflammatory activity and be associated with irritable bowel syndrome, Crohn's, ulcerative colitis and diarrhea. Studies have also revealed that chronic psychological stress may be associated with an increase in E.Coli colonisation.

TREATMENT SUGGESTIONS: Commensal probiotic cocktails are suggested to prevent and reverse gut elevated colonization.

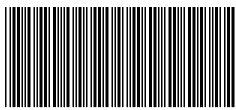
### LACTOBACILLUS CASEI LOW:    PHYLUM: Firmicutes

DESCRIPTION: Lactobacillus casei is a Gram-positive, rod-shaped, non-spore-forming, anaerobic probiotic bacterium involved in the fermentation of foods like cheese and yogurt. It produces antimicrobial substances, enhances gut barrier function, reduces pathogenic bacteria, and modulates the immune system. This bacterium is used to prevent and may assist various forms of diarrhea, including infectious diarrhea, traveller's diarrhea, and antibiotic-associated diarrhea.

TREATMENT SUGGESTIONS: Consider probiotic supplementation containing L. casei and consuming fermented foods such as cheese and yogurt.

### LACTOBACILLUS DELBRUECKII LOW:    PHYLUM: Firmicutes





Dr Test Doctor Test Clinic. 123 Test Street, Test Suburb Victoria 3125

Lab ID  
Patient ID PAT-100009  
Ext ID 25272-0001

## Test Patient

Sex: Female • 45yrs • 01-Jan-80  
123 Home Street, Test Suburb Vic 3125

RECEIVED  
29-Sep-25

### DESCRIPTION:

Lactobacillus delbrueckii is a beneficial Gram-positive bacterium commonly found in the gut microbiome and known for its role in maintaining gastrointestinal health. It produces lactic acid through the fermentation of carbohydrates, contributing to a lower gut pH, which inhibits the growth of pathogenic microorganisms such as Clostridium and Candida species. Additionally, L. delbrueckii can enhance the intestinal barrier function and modulate the host immune response by promoting the production of anti-inflammatory cytokines. Its presence in the gut is associated with improved digestion and nutrient absorption, making it an important component in supporting overall gut health and microbial balance.

LACTOBACILLUS PLANTARUM LOW: PHYLUM: Firmicutes

DESCRIPTION: Lactobacillus plantarum is a Gram-positive, non-spore-forming, rod-shaped bacterium. L. plantarum plays a crucial role in gut health by enhancing intestinal barrier function, modulating the immune system, and inhibiting pathogenic bacteria. Additionally, it is beneficial for conditions such as irritable bowel syndrome, ulcerative colitis, and high cholesterol.

TREATMENT SUGGESTIONS: Consider probiotic supplementation containing L. plantarum.

LACTOBACILLUS SALIVARIUS LOW: PHYLUM: Firmicutes

DESCRIPTION: Lactobacillus salivarius is a Gram-positive, rod-shaped, non-spore-forming bacterium predominantly found in the human oral cavity, gastrointestinal tract, and vagina. It plays a significant role in maintaining oral and gut health by producing lactic acid and bacteriocins, which inhibit the growth of pathogenic bacteria. L. salivarius enhances gut barrier function, modulates the immune system, and helps in the digestion of proteins and complex carbohydrates. It has been studied for its potential benefits in managing conditions such as irritable bowel syndrome (IBS), periodontal disease, and atopic dermatitis, highlighting its importance in promoting overall health and preventing infections.

TREATMENT SUGGESTIONS: Consider L. salivarius as a probiotic strain which may improve intestinal permeability and immune response.

CLOSTRIDIUM SPECIES ELEVATED: PHYLUM: Firmicutes

DESCRIPTION: Clostridium is a genus of anaerobic, Gram-positive bacteria found in the environment and the intestinal tract. This genus includes several species and can utilize large amounts of nutrients that cannot be digested by host and produce short-chain fatty acids (SCFAs), which play a noticeable role in intestinal homeostasis. Colonisation of Clostridium species may be affected by diet (carbohydrate and protein in diet) and general health and may be protective against inflammation and infection. However, some species may act as potential pathogens. Elevated Clostridium species may indirectly damage the intestinal epithelial cells. Another symptom may include constipation.

TREATMENT SUGGESTIONS: Treatment may involve the use of probiotics, treatment of any intestinal infections and dietary modification (reduce consumption of different fibres, such as inulin, oligofructose, arabinoxylan, guar gum and starch).

AKKERMANSIA MUCINIPHILA ELEVATED: PHYLUM: Verrucomicrobia

DESCRIPTION: Akkermansia muciniphila is a Gram-negative, strictly anaerobic, non-motile bacterium, often considered a human intestinal symbiont. There is growing evidence to suggest that the prevalence of this bacteria is associated with intestinal homeostasis, immunity, and a healthy gut. However, elevated colonisation may be associated with intestinal inflammation.

TREATMENT SUGGESTIONS: Treatment may involve the use of probiotics, treatment of any intestinal infections and dietary modification.

### Methodology

Automated Chemistry/Immunochemistry, Quantitative PCR (qPCR), Polymerase Chain Reaction (PCR), Chemiluminescence Immunoassay (CLIA)