

Dr.CAMILLA WHITE OCEAN SHORES NUTRIONAL AND ENVIRONMENTAL MEDICINE SHOP 8/84 RAJAH ROAD

HALLEY FLANAGAN 01-Jan-1986 **Female**

61 SHAMROCK AVENUE BANORA POINT NSW 2486

LAB ID: 4098285 UR NO.: 6657732 Collection Date: 05-May-2025 **Received Date:** 07-May-2025



COMPLETE MICROBIOME MAPPING

General Macro	scopic Descriptio	n en
	Result	Markers
Stool Colour	Brown	Colour - Brown is the colour of normal stool. Other colours may indicate abnormal gut health.
Stool Form	Semiformed	Form -Sample form is categorised using the Bristol stool chart. A comment on stool appearance can be found in the comments section.
Mucous	Not Detected	Mucous - Mucous production may indicate the presence of an infection and/or inflammation.
Occult Blood	Negative	Blood (Macro) - The presence of blood in the stool may be the result of several causes besides colorectal bleeding, including hemorrhoids or gastrointestinal infection.

Short Chain Fatty Acids	Result	Range	Units	
Methodology: GC/MS				
Short Chain Fatty Acids, Beneficial	49.0	> 13.6	umol/g	
Butyrate	17.1	10.8 - 33.5	%	•
Acetate	59.1	44.5 - 72.4	%	•
Propionate	20.7	0.0 - 32.0	%	•
Valerate	3.1	0.5 - 7.0	%	

GIT Functional Markers	Result	Range	Units	
Methodology: FEIA, EIA, CLIA, pH electrode				
Calprotectin.	31.7	0.0 - 50.0	ug/g	•
Pancreatic Elastase	>800.0	> 200.0	ug/g	
Secretory (slgA)	791.4	510.0 - 2040	.0 ng/mL	•
Zonulin	48.0	0.0 - 107.0	ng/mL	
Beta glucuronidase	2656.6	368.0 - 6266	.0 U/g	
Steatocrit	<1.0	0.0 - 10.0	%	
a-Transglutaminase IgA	<20	0.0 - 100.0	units/L	•
pH	7.2	6.3 - 7.7		•

Microbiome Mapping Summary

Firmicutes:Bacteroidetes Ratio

Parasites & Worms Bacteria & Viruses Mycology Enterococcus faecium Klebsiella pneumoniae complex. Key Phyla Microbiota

RATIO < 1.00

0.34 Relative Commensal Abundance of the 6 Phyla groups can be found on page 6 of this report



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Parasites and Worms.	Result	Range	Units	
Parasitic Organisms				
Cryptosporidium species	<dl< td=""><td>< 1.0</td><td>x10^5 org/g</td><td></td></dl<>	< 1.0	x10^5 org/g	
Entamoeba histolytica.	<dl< td=""><td>< 1.0</td><td>x10^5 org/g</td><td>•</td></dl<>	< 1.0	x10^5 org/g	•
Giardia intestinalis	<dl< td=""><td>< 1.0</td><td>x10^5 org/g</td><td>•</td></dl<>	< 1.0	x10^5 org/g	•
Blastocystis hominis.	<dl< td=""><td>< 1.0</td><td>x10^5 org/g</td><td>•</td></dl<>	< 1.0	x10^5 org/g	•
Dientamoeba fragilis.	<dl< td=""><td>< 1.0</td><td>x10^5 org/g</td><td>•</td></dl<>	< 1.0	x10^5 org/g	•
Endolimax nana	<dl< td=""><td>< 1.0</td><td>x10^5 org/g</td><td></td></dl<>	< 1.0	x10^5 org/g	
Entamoeba coli.	<dl< td=""><td>< 5.0</td><td>x10^5 org/g</td><td>•</td></dl<>	< 5.0	x10^5 org/g	•
Pentatrichomonas hominis	<dl< td=""><td>< 1.0</td><td>x10^5 org/g</td><td></td></dl<>	< 1.0	x10^5 org/g	

Ancylostoma duodenale, Roundworm
Ascaris lumbricoides, Roundworm
Trichuris trichiura, Whipworm
Enterocytozoon spp
Strongyloides spp, Roundworm
Not Detected
Not Detected
Not Detected
Not Detected

Necator americanus, Hookworm Enterobius vermicularis,Pinworm Hymenolepis spp, Tapeworm Taenia species, Tapeworm

Not Detected Not Detected Not Detected Not Detected

Comment: Not Detected results indicate the absence of detectable DNA in the sample for the worms reported. NOTE: Reflex testing is performed on clinically indicated samples

portunistic Bacteria/Overgrowth	Result	Range	Units
Bacillus species.	<dl< th=""><th>< 1.00</th><th>x10^4 CFU/g</th></dl<>	< 1.00	x10^4 CFU/g
Enterococcus faecalis	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Enterococcus faecium	20.00 *H	< 1.00	x10^5 CFU/g
Morganella species	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Pseudomonas species	<dl< th=""><td>< 1.00</td><td>x10^4 CFU/g</td></dl<>	< 1.00	x10^4 CFU/g
Pseudomonas aeruginosa.	<dl< th=""><td>< 3.00</td><td>x10^4 CFU/g</td></dl<>	< 3.00	x10^4 CFU/g
Staphylococcus species	<dl< th=""><td>< 1.00</td><td>x10^3 CFU/g</td></dl<>	< 1.00	x10^3 CFU/g
Staphylococcus aureus	<dl< th=""><td>< 5.00</td><td>x10^3 CFU/g</td></dl<>	< 5.00	x10^3 CFU/g
Streptococcus agalactiae.	<dl< th=""><td>< 3.00</td><td>x10^4 CFU/g</td></dl<>	< 3.00	x10^4 CFU/g
Streptococcus anginosus.	<dl< th=""><td>< 1.00</td><td>x10^6 CFU/g</td></dl<>	< 1.00	x10^6 CFU/g
Streptococcus mutans.	<dl< th=""><td>< 1.00</td><td>x10^4 CFU/g</td></dl<>	< 1.00	x10^4 CFU/g
Streptococcus oralis.	<dl< th=""><td>< 1.00</td><td>x10^6 CFU/g</td></dl<>	< 1.00	x10^6 CFU/g
Streptococcus salivarius.	<dl< th=""><td>< 5.00</td><td>x10^6 CFU/g</td></dl<>	< 5.00	x10^6 CFU/g
Methanobrevibacter smithii	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Desulfovibrio piger	<dl< th=""><td>< 18.00</td><td>x10^6 CFU/g</td></dl<>	< 18.00	x10^6 CFU/g
Enterobacter cloacae complex.	0.35	< 5.00	x10^5 CFU/g
tential Autoimmune Triggers			
Citrobacter species.	<dl< th=""><td>< 5.00</td><td>x10^4 CFU/g</td></dl<>	< 5.00	x10^4 CFU/g
Citrobacter freundii complex.	<dl< th=""><td>< 5.00</td><td>x10^4 CFU/g</td></dl<>	< 5.00	x10^4 CFU/g
Klebsiella species	1.61	< 5.00	x10^3 CFU/g
Klebsiella pneumoniae complex.	7.66 *H	< 5.00	x10^5 CFU/g
Prevotella copri	<dl< th=""><td>< 1.00</td><td>x10^9 CFU/g</td></dl<>	< 1.00	x10^9 CFU/g
Proteus species	<dl< th=""><td>< 5.00</td><td>x10^5 CFU/g</td></dl<>	< 5.00	x10^5 CFU/g
Proteus mirabilis.	<dl< th=""><td>< 1.00</td><td>x10^4 CFU/g</td></dl<>	< 1.00	x10^4 CFU/g
Fusobacterium species	2.45	< 20.00	x10^4 CFU/g



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Mycology	Result	Range	Units
Candida dubliniensis.	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Candida glabrata.	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Candida intermedia.	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Candida krusei.	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Candida lambica.	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Candida lusitaniae.	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Candida parapsilosis.	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Candida tropicalis.	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Candida albicans.	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Candida famata.	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Candida keyfr.	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Candida lipolytica.	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Geotrichum species.	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Rhodotorula species.	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g
Saccharomyces cerevisiae:	<dl< th=""><td>< 1.00</td><td>x10^5 CFU/g</td></dl<>	< 1.00	x10^5 CFU/g



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Bacterial Pathogens:	Result	Range	Units
Aeromonas hydrophila.	<dl< th=""><th>< 1.00</th><th>x10^3 CFU/g</th></dl<>	< 1.00	x10^3 CFU/g
Campylobacter species.	<dl< th=""><th>< 1.00</th><th>x10^5 CFU/g</th></dl<>	< 1.00	x10^5 CFU/g
C. difficile, Toxin A	<dl< th=""><th>< 1.00</th><th>x10^4 CFU/g</th></dl<>	< 1.00	x10^4 CFU/g
C. difficile, Toxin B	<dl< th=""><th>< 1.00</th><th>x10^4 CFU/g</th></dl<>	< 1.00	x10^4 CFU/g
Enteroaggregative E. coli	<dl< th=""><th>< 1.00</th><th>x10^3 CFU/g</th></dl<>	< 1.00	x10^3 CFU/g
Enteropathogenic E. coli	<dl< th=""><th>< 1.00</th><th>x10^3 CFU/g</th></dl<>	< 1.00	x10^3 CFU/g
E. coli O157	<dl< th=""><th>< 1.00</th><th>x10^2 CFU/g</th></dl<>	< 1.00	x10^2 CFU/g
Hypervirulent Clostridium difficile	<dl< th=""><th>< 1.00</th><th>x10^3 CFU/g</th></dl<>	< 1.00	x10^3 CFU/g
Enteroinvasive E. coli/Shigella	<dl< th=""><th>< 1.00</th><th>x10^3 CFU/g</th></dl<>	< 1.00	x10^3 CFU/g
Enterotoxigenic E. coli LT/ST	<dl< th=""><th>< 1.00</th><th>x10^5 CFU/g</th></dl<>	< 1.00	x10^5 CFU/g
Salmonella species.	<dl< th=""><th>< 1.00</th><th>x10^5 CFU/g</th></dl<>	< 1.00	x10^5 CFU/g
Shiga toxigenic E.coli	<dl< th=""><th>< 1.00</th><th>x10^3 CFU/g</th></dl<>	< 1.00	x10^3 CFU/g
Vibrio species.	<dl< th=""><th>< 1.00</th><th>x10^4 CFU/g</th></dl<>	< 1.00	x10^4 CFU/g
Yersinia species.	<dl< th=""><th>< 1.00</th><th>x10^5 CFU/g</th></dl<>	< 1.00	x10^5 CFU/g
Helicobacter pylori	<dl< th=""><th>< 1.0</th><th>x10^3 CFU/g</th></dl<>	< 1.0	x10^3 CFU/g

Comment: Helico Pylori virulence factors will be listed below if detected POSITIVE

Gene: A2142C Not Detected
Gene: A2142G Not Detected
Gene: A2143G Not Detected
H.pylori Virulence Factor, babA Not Detected

H.pylori Virulence Factor, babA
H.pylori Virulence Factor, oipA
H.pylori Virulence Factor, oipA
H.pylori Virulence Factor, oipA
H.pylori Virulence Factor, vacA
H.pylori Virulence Factor, vacA
H.pylori Virulence Factor, vacA
H.pylori Virulence Factor, vacA
Not Detected
H.pylori Virulence Factor, vacA
Not Detected
H.pylori Virulence Factor, vacA
Not Detected

Units

Viral Pathogens	Result Range
Adenovirus 40/41	Not Detected
Norovirus GI/II	Not Detected
Rotavirus A	Not Detected
Sapovirus (I,II,IV,V)	Not Detected
Astrovirus (hAstro)	Not Detected



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Normal Bacterial GUT Flora.	Result	Range	Units	
Bacteroides fragilis	0.8*L	1.6 - 250.0	x10^5 CFU/g	
TOTAL BIFIDOBACTERIA	86.7	5.0 - 2000.0	x10^6 CFU/g	
Bifidobacterium adolescentis	<dl< th=""><th>4.6 - 1000.0</th><th>x10^6 CFU/g</th><th></th></dl<>	4.6 - 1000.0	x10^6 CFU/g	
Bifidobacterium bifidum.	<dl< th=""><th>4.6 - 1000.0</th><th>x10^6 CFU/g</th><th></th></dl<>	4.6 - 1000.0	x10^6 CFU/g	
Bifidobacterium breve.	<dl< th=""><th>4.6 - 1000.0</th><th>x10^6 CFU/g</th><th></th></dl<>	4.6 - 1000.0	x10^6 CFU/g	
Bifidobacterium longum	86.7	4.6 - 1000.0	x10^6 CFU/g	
Enterococcus species	2144.0 *H	1.9 - 2000.0	x10^3 CFU/g	
Escherichia species	655.0	3.7 - 3800.0	x10^4 CFU/g	•
TOTAL LACTOBACILLI	16.9	1.7 - 3000.0	x10^3 CFU/g	•
Lactobacillus acidophilus.	<dl< th=""><th>1.7 - 500.0</th><th>x10^3 CFU/g</th><th></th></dl<>	1.7 - 500.0	x10^3 CFU/g	
Lactobacillus casei.	<dl< th=""><th>1.7 - 500.0</th><th>x10^3 CFU/g</th><th></th></dl<>	1.7 - 500.0	x10^3 CFU/g	
Lactobacillus delbrueckii	2.8	1.7 - 500.0	x10^3 CFU/g	
Lactobacillus plantarum.	14.1	1.7 - 500.0	x10^3 CFU/g	
Lactobacillus rhamnosus	<dl< th=""><th>1.7 - 500.0</th><th>x10^3 CFU/g</th><th></th></dl<>	1.7 - 500.0	x10^3 CFU/g	
Lactobacillus salivarius	<dl< th=""><th>1.7 - 500.0</th><th>x10^3 CFU/g</th><th></th></dl<>	1.7 - 500.0	x10^3 CFU/g	
Clostridium species	13.5	5.0 - 50.0	x10^7 CFU/g	
Oxalobacter formigenes	<dl*l< th=""><th>> 5.00</th><th>x10^6 CFU/g</th><th></th></dl*l<>	> 5.00	x10^6 CFU/g	
Akkermansia muciniphila	3.40	1.00 - 50.00	x10^7 CFU/g	•
Faecalibacterium prausnitzii	134.0	100.0 - 3500.0) x10^6 CFU/g	

A total count of Lactobacillus and Bifidobacterium has been included to offer a broad overview of the species present in the microbiome, which may assist in guiding clinical treatment decisions. However, identifying individual strains of Lactobacillus and Bifidobacterium can yield more detailed and clinically specific information, as different strains exhibit distinct physiological effects, as outlined in the probiotics action chart

Actions	L. plantarum HEAL9	L. paracasel 8700:2	L. plantarum HEAL19	L. plantarum 6595	L. plantarum 299V	L. rhamnosus GG	L. acidophilus LA02	B. animals subsp. lactis BS01	L. casei LC03	B. breve BR03	L. fermentum LF08	L. crispatus strains	B. animals subsp. lactis BA05	L. plantarum LP01	L. rhamnosus LR06	B. longum 04	L. fermentum LF16	L. salivarius LS01	B. breve B632	L. fermentum LF10	L. salivarius LS03	L. helveticus Rosell-52	L. rhamnosus Rosell-11	B. longums Rosell-75	S. boulardii CNCM 1-1079	S. thermophilus FP4
Intestinal epithelial barrier health				•	•	•			•	•								•				•	•		•	
Mucous membrane health				•		•																	•		•	
Normalisation of bowel movements					•	•	•	•		•				•								•				
Normalisation of bloating					•	•	•	•		•				•												
Normalisation of peristalsis					•	•	•	•		•				•											•	
Autoimmune immunomodulation	•	•	•		•	•																				
Inhibition of pathogenic overgrowth				•	•	•				•									•		•	•	•	•	•	
Inactivate microbial toxins																									•	
Increase infection resistance	•	•		•		•		•														•		•	•	
Th1/Th2 immune cell modulation						•				•								•	•			•	•			
Staphylococci inhibition										•								•								
Gut-brain axis support					•									•	•	•	•					•		•		
GABA production						•			•																	
Bone resorption inhibition	•	•	•																							
E. coli inhibition										•				•	•				•			•	•	•	•	
Oxalate degradation						•	•							•												



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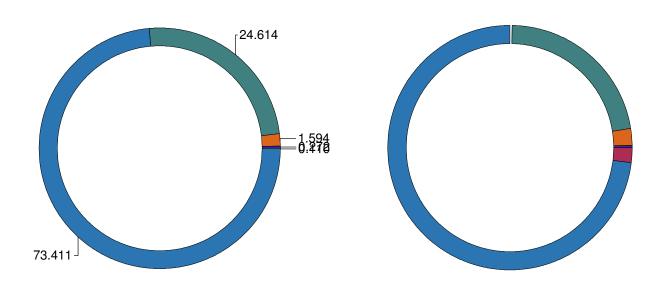
Introduction:

Your gut microbiome is a collective name for the 40 trillion cells and up to 1000 microbial species that include bacteria, viruses, fungi, parasites, and archaea and reside in our gut. The number of gut bacterial cells is approximately equal to the total number of human cells in our body, so if we consider only cell counts, we are only about half human. In terms of gene counts, the microbiome contains about 200 times more genes than the human genome, making bacterial genes responsible for over 99% of our body's gene content! Of all the microbial communities in the human body, the gut microbiome is by far the most dense, diverse, and physiologically important ecosystem to our overall health.

Re	lative Commensal Abunda	nce Result	Range	Units
	Bacteroidetes Phylum	73.411	50.000 - 95.000	%
	Firmicutes Phylum	24.614	3.500 - 40.000	%
	Proteobacteria Phylum	1.594	0.050 - 12.500	%
	Verrucomicrobia Phylum	0.272	0.000 - 2.400	%
	Actinobacteria Phylum	0.110	0.001 - 4.818	%
	Euryarchaeota Phylum	0.000	0.000 - 0.010	%

Your Phyla:

Healthy Phyla:



References

NOTE: Relative abundance reference ranges have been based on a healthy population study.

King CH, et., al. (2019) Baseline human gut microbiota profile in healthy people and standard reporting template. PLoS One. 2019 Sep 11;14(9):e0206484.



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Pathogen Summary:

Macroscopy Comment

BROWN coloured stool is considered normal in appearance.

A SEMI-FORMED stool specimen classified as Type 4 on the Bristol Stool Chart is generally considered optimal, indicating balanced gut motility, adequate hydration, and sufficient dietary fibre intake. This stool consistency is often associated with efficient digestion, proper colonic function, and microbial stability. However, while Type 4 stools typically suggest gastrointestinal homeostasis, they do not always correlate with a healthy gut microbiome. Pathogenic bacteria, viral infections, parasitic infestations, or gut dysbiosis may still be present, even in well-formed stools. Clinical recommendations include maintaining a fiber-rich diet with prebiotic and probiotic sources, ensuring consistent hydration, and promoting gut microbial diversity through fermented foods or supplementation.

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.

Metabolism Comment

In a healthy gut Short Chain Fatty Acids (SCFAs) exhibited in the following proportions; Butyrate, Acetate, Propionate (16%:60%:24%).

The primary SCFAs butyrate, propionate and acetate are produced by predominant commensal bacteria via fermentation of soluble dietary fibre and intestinal mucus glycans.

Key producers of SCFAs include Faecalibacterium prausnitzii, Akkermansia mucinphila, Bacteroides fragilis, Bifidobacterium, Clostridium and Lactobacillus Spp.

The SCFAs provide energy for intestinal cells and regulate the actions of specialised mucosal cells that produce anti-inflammatory and antimicrobial factors, mucins that constitute the mucus barriers, and gut active peptides that facilitate appetite regulation and euglycemia. Abnormal SCFAs may be associated with dysbiosis, intestinal barrier dysfunction and inflammatory conditions.

Page 7 of 13 Complete Microbiome Map V2 Lab ID: 4098285 Patient Name: HALLEY FLANAGAN Printed: 14/May/25 11:35



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GIT Markers Comment

PANCREATIC ELASTASE: Normal exocrine pancreatic function.

Pancreatic Elastase reflects trypsin, chymotrypsin, amylase and lipase activity.

This test is not affected by supplements of pancreatic enzymes.

Healthy individuals should be producing >500 ug/g of PE-1 under normal/healthy conditions.

PE-1 levels between 200 - 500 ug/g may indicate suboptimal production.

PE-1 levels <200 ug/g indicate clear inadequate production.

The clinician should therefore consider digestive enzyme supplementation if one or more of the following conditions is present: Loose watery stools, Undigested food in the stools, Post-prandial abdominal pain, Nausea or colicky abdominal pain, Gastroesophageal reflux symptoms, Bloating or food intolerance.

Testing performed by chemiluminescence immunosassay (CLIA).

CALPROTECTIN Normal:

Faecal calprotectin values <50 ug/g are not indicative of inflammation in the gastrointestinal tract. Subjects with low faecal calprotectin levels normally do not need to be further investigated by invasive procedures. In patients with strong clinical indications of intestinal inflammation, repeat testing may be useful.

Test performed by Diasorin Liaison XL chemiluminescent immunoassay (CLIA).

SECRETORY IGA NORMAL:

Secretory IgA is within range.

Secretory IgA represents the first line of defence of the gastrointestinal mucosa and is central to the normal function of the gastrointestinal tract as an immune barrier. Review this level with other pathogenic bacteria and normal commensal flora. Lower levels within reference range should be interpreted clinically.

ZONULIN NORMAL:

Zonulin is a protein that modulates intestinal barrier function. This results is considered normal.

beta-GLUCORONIDASE NORMAL:

B-Glucuronidase is considered normal and is within reference range.



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Opportunistic Bacteria Comment

ENTEROCOCCUS FAECIUM ELVATED:

PHYLUM: Firmicutes

DESCRIPTION:

Enterococcus faecium is a gram-positive bacterium commensal bacterium inhabiting the gastrointestinal tracts of humans. It can however, be implicated in a variety of infections of which urinary tract infections are the most common. Enterococci have recently emerged as a prevalent multidrug-resistant nosocomial pathogen. Resistant Enterococci densely colonize the gut particularly following antibiotic treatment, which can deplete the GI tract of protective commensals.

TREATMENT SUGGESTIONS:

Treatment of Enterococcus species in gut flora may not be necessary or recommended. However, if there is overgrowth of this genus with implicated infection, treatment may be warranted. Enterococci are challenging to treat due their drug-resistant mechanisms. Ampicillin is the preferred antibiotic used to treat enterococci infections if required. Rule out allergy to above medication before prescribing/taking.

Potential Autoimmune Comments

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.

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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. 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

DECODIDATION

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 BREVE LOW:

PHYLUM: Actinobacteria

DESCRIPTION:

Bifidobacterium breve is a Gram-positive, anaerobic bacterium that is commonly found in the human gastrointestinal tract, particularly in the intestines of infants. B. breve is known for its ability to metabolise various carbohydrates, including human milk oligosaccharides, which is essential for the development of a healthy gut flora in newborns.

Studies demonstrate that B. breve exhibits several beneficial properties, including the production of short-chain fatty acids (SCFAs) such as acetate, which contribute to gut health by lowering pH and inhibiting the growth of pathogenic bacteria.

Additionally, B. breve may alleviate symptoms of irritable bowel syndrome (IBS) and improve symptoms of atopic dermatitis.

ENTEROCOCCUS SPECIES ELEVATED:

PHYLUM: Firmicutes

DESCRIPTION

Enterococci are Gram-positive facultative anaerobic cocci, commonly found in the environment, water, food, human skin, oral cavity and intestine. Non-faecium, non-faecalis enterococci are increasingly recognized in reports as causes of the bloodstream, urinary tract or endovascular infections. Elevated enterococcal colonization of the GI tract is the main predisposing factor for severe infections, which occur through gut translocation. High levels may also be due to reduced digestive capacity, constipation, or small intestinal bacterial overgrowth.

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

LACTOBACILLUS ACIDOPHILUS LOW:

PHYLUM: Firmicutes



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DESCRIPTION:

Lactobacillus acidophilus is a Gram-positive, rod-shaped, non-spore-forming bacterium commonly found in the human gut and fermented foods. It plays a key role in oxalate degradation, bowel normalisation and may assist patients with bloating.

TREATMENT SUGGESTIONS:

Consider probiotic supplementation containing L. acidophilus.

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 RHAMNOSUS LOW:

PHYLUM: Firmicutes

DESCRIPTION:

Lactobacillus Rhamnosus is a Gram-positive anaerobic bacterium and is one of the most widely used probiotic strains, of which various health effects are well documented including the prevention and treatment of gastro-intestinal infections and diarrhea and even preventing certain allergic symptoms.

Decreased Lactobacillus rhamnosus colonisation has been shown to decrease gastro-intestinal health, increasing the risk of gastro-intestinal infections and diarrhea as well as extra-intestinal infections including oral and respiratory health. Studies have also revealed that chronic psychological stress and alcohol use may be associated with a decrease in Lactobacillus species, as well as antibiotic / medication use.

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

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.

OXOLOBACTER FORMIGENES LOW:

PHYLUM: Proteobacterium

DESCRIPTION:

Oxalobacter formigenes is a Gram negative oxalate-degrading anaerobic bacterium. Oxolate is formed in the liver by amino acid catabolism as well as present in a wide range of foods including tea, coffee, chocolate and certain fruits and vegetables. High concentration of oxalate in the urine is related to the potential formation of calcium oxalate kidney stones. Oxolobacter Formigenes is the main known bacterial species involved in oxalate degradation in the gut and maintains oxalate homeostasis. Levels of O. Formigenes tends to decrease with age as well as with the use of antibiotics or other drugs. Low levels may be associated with calcium oxide stone formation, inflammatory bowel disease or Crohn's.



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TREATMENT SUGGESTIONS:

Treatment options include probiotic treatment and low oxalate diet modification. Urinary oxalate levels may also need to be investigated.



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The Four "R" Treatment Protocol

	Using a course of antimicrobial, antibacterial,	ANTIMICROBIAL	Oil of oregano, berberine, caprylic acid					
	antiviral or anti parastic therapies in cases where organisms are present. It may	ANTIBAC TERIAL	Liquorice, zinc carnosine, mastic gum, tribulus, berberine, black walnut, caprylic acid, oil of oregano					
REMOVE	also be necessary to remove offending foods, gluten, or	ANTIFUNGAL	Oil of oregano, caprylic acid, berberine, black walnut					
	medication that may be acting as antagonists.	ANTIPARASTIC	Artemesia, black walnut, berberine, oil of oregano					
	Consider testing IgG96 foods as a tool for removing offending foods.	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					
ш	Recolonisation with healthy, beneficial bacteria.	PREBIOTICS	Sippery elm, pectin, larch arabinogalactans					
RENOCULATE	Supplementation with probiotics, along with the use of prebiotics helps re-establish the proper microbial balance.	PROBIOTICS	Bifidobacterium animalis sup lactise, lactobacillus acidophilus, lactobacillus plantarum, lactobacillus casei, bifidobacterium breve, bifidobacterium bifidum, bifidobacterium longum, lactobacillus salivarius sep salivarius, lactobacillus paracasei, lactobacillus rhamnosus, Saccaromyces boulardii					
BALANCE	Restore the integrity of the gut mucosa by giving support to healthy mucosal cells, as well as immune support. Address whole	INTESTINAL MUCOSA IMMUNE SUPPORT	Saccaromyces boulardii, lauric acid					
REPAIR & REBAL	body health and lifestyle factors so asto prevent future GI dysfunction.	INTESTINAL BARRIER REPAIR	L-Glutamine, a loe vera, liquorice, marshmallow root, okra, quercetin, slippery elm, zinc camosine, Saccaromyces boulardii, omega 3 essential fatty acids, B vitamins					
REP.		SUPPORT CONSIDERATION	Seep, diet, exercise, and stress management					