

TEST PATIENT

Dr.TEST DOCTOR



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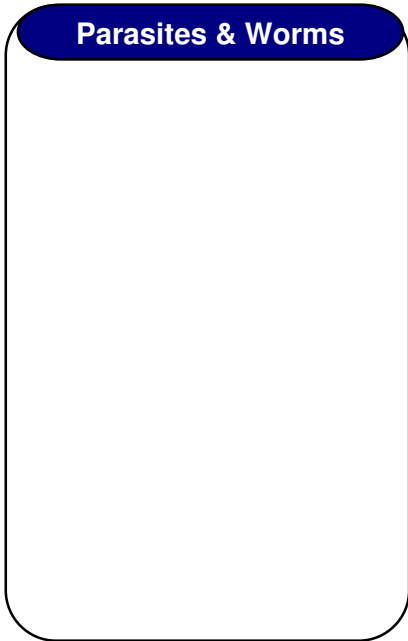
Date of Birth : 10-Aug-1954
Sex : F
Collected : 24/Oct/2019
Received: 24-Oct-2019
1 TEST STREET
MELBOURNE 3004
Lab id : **3639345** UR#: 000000

TEST HEALTH CENTRE
123 TEST STREET
BURWOOD VIC 3125

MICROBIOME REVIEW PROFILE CODE 2207

Microbiome Mapping Summary

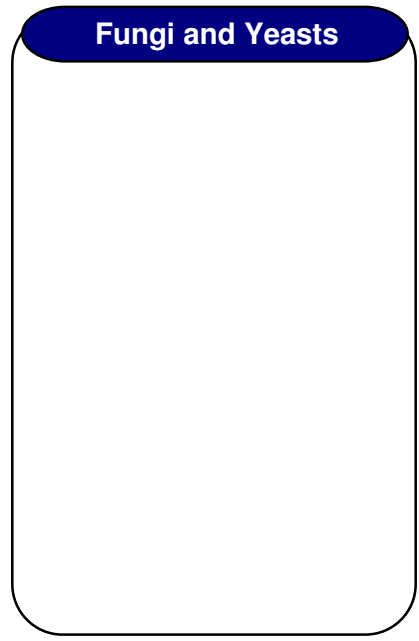
Parasites & Worms



Bacteria & Viruses

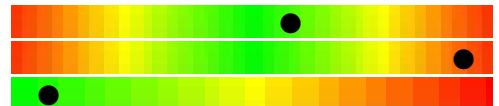
Bacillus species.
Pseudomonas aeruginosa.
Streptococcus species
Citrobacter freundii.
Klebsiella pneumoniae.
Helicobacter pylori

Fungi and Yeasts



Key Phyla Microbiota

Bacteroidetes	22.49	8.61 - 33.10	x10 ¹¹ org/g
Firmicutes	37.68 *H	5.70 - 30.40	x10 ¹⁰ org/g
Firmicutes:Bacteroidetes Ratio	0.17	< 1.00	RATIO



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Parasites and Worms. Result Range Units

Parasitic Organisms

Cryptosporidium.	<dl	< 1.0	x10 ⁶ org/g	
Entamoeba histolytica.	<dl	< 1.0	x10 ⁴ org/g	
Giardia lamblia.	<dl	< 5.0	x10 ³ org/g	
Blastocystis hominis.	<dl	< 2.0	x10 ³ org/g	
Dientamoeba fragilis.	<dl	< 1.0	x10 ⁵ org/g	
Endolimax nana	<dl	< 1.0	x10 ⁴ org/g	
Entamoeba coli.	<dl	< 5.0	x10 ⁶ org/g	
Pentatrichomonas hominis	<dl	< 1.0	x10 ² org/g	

Worms

Ancylostoma duodenale, Roundworm	Not Detected
Ascaris lumbricoides, Roundworm	Not Detected
Necator americanus, Hookworm	Not Detected
Trichuris trichiura, Whipworm	Not Detected
Taenia species, Tapeworm	Not Detected
Enterobius vermicularis, Pinworm	Not Detected

Comment: Not Detected results indicate the absence of detectable DNA in this sample for the worms reported.

Opportunistic Bacteria/Overgr Result Range Units

Bacillus species.	1.9 *H	< 1.5	x10 ⁵ org/g	
Enterococcus faecalis	<dl	< 1.0	x10 ⁴ org/g	
Enterococcus faecium	<dl	< 1.0	x10 ⁴ org/g	
Morganella species	<dl	< 1.0	x10 ³ org/g	
Pseudomonas species	<dl	< 1.0	x10 ⁴ org/g	
Pseudomonas aeruginosa.	9.6 *H	< 5.0	x10 ² org/g	
Staphylococcus species	<dl	< 1.0	x10 ⁴ org/g	
Staphylococcus aureus	<dl	< 5.0	x10 ² org/g	
Streptococcus species	1.9 *H	< 1.0	x10 ³ org/g	
Methanobacteriaceae	2.30	< 5.00	x10 ⁹ org/g	

Potential Autoimmune Triggers

Citrobacter species.	4.7	< 5.0	x10 ⁵ org/g	
Citrobacter freundii.	80.0 *H	< 5.0	x10 ⁵ org/g	
Klebsiella species	4.3	< 5.0	x10 ³ org/g	
Klebsiella pneumoniae.	67.0 *H	< 5.0	x10 ⁴ org/g	
Prevotella copri	<dl	< 1.0	x10 ⁷ org/g	
Proteus species	<dl	< 5.0	x10 ⁴ org/g	
Proteus mirabilis.	<dl	< 1.0	x10 ³ org/g	
Fusobacterium species	5.30	< 10.00	x10 ⁷ org/g	

Fungi & Yeast Result Range Units

Candida species.	<dl	< 5.0	x10 ³ org/g	
Candida albicans.	<dl	< 5.0	x10 ² org/g	
Geotrichum species.	<dl	< 3.0	x10 ² org/g	
Microsporidium species	<dl	< 5.0	x10 ³ org/g	
Rhodotorula species.	<dl	< 1.0	x10 ³ org/g	

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Bacterial Pathogens	Result	Range	Units	
Aeromonas species.	<dl	< 1.0	x10 ³ CFU/g	
Campylobacter.	<dl	< 1.0	x10 ³ CFU/g	
C. difficile, Toxin A	<dl	< 1.0	x10 ³ CFU/g	
C. difficile, Toxin B	<dl	< 1.0	x10 ³ CFU/g	
Enterohemorrhagic E. coli	<dl	< 1.0	x10 ³ CFU/g	
E. coli O157	<dl	< 1.0	x10 ² CFU/g	
Enteroinvasive E. coli/Shigella	<dl	< 1.0	x10 ³ CFU/g	
Enterotoxigenic E. coli LT/ST	<dl	< 1.0	x10 ³ CFU/g	
Shiga-like Toxin E. coli stx1	<dl	< 1.0	x10 ³ CFU/g	
Shiga-like Toxin E. coli stx2	<dl	< 1.0	x10 ³ CFU/g	
Salmonella.	<dl	< 1.0	x10 ⁴ CFU/g	
Vibrio cholerae	<dl	< 1.0	x10 ⁵ CFU/g	
Listeria monocytogenes	<dl	< 1.0	x10 ³ CFU/g	
Yersinia enterocolitica.	<dl	< 1.0	x10 ⁵ CFU/g	
Helicobacter pylori	56.0 *H	< 1.0	x10 ³ CFU/g	

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

H.pylori Virulence Factor, babA	Not Detected
H.pylori Virulence Factor, cagA	Not Detected
H.pylori Virulence Factor, dupA	Not Detected
H.pylori Virulence Factor, iceA	Not Detected
H.pylori Virulence Factor, oipA	Not Detected
H.pylori Virulence Factor, vacA	Not Detected
H.pylori Virulence Factor, virB	Not Detected
H.pylori Virulence Factor, virD	Not Detected

Viral Pathogens	Result	Range	Units	
Adenovirus 40/41	<dl	< 1.0	x10 ¹⁰ CFU/g	
Norovirus GI/II	<dl	< 1.0	x10 ⁷ CFU/g	
Bocavirus	<dl	< 1.0	x10 ¹⁰ CFU/g	

Normal Bacterial GUT Flora	Result	Range	Units	
Bacteroides fragilis	46.0	1.6 - 250.0	x10 ⁹ CFU/g	
Bifidobacterium species	650.0	> 6.7	x10 ⁷ CFU/g	
Enterococcus species	23.0	1.9 - 2000.0	x10 ⁵ CFU/g	
Escherichia species	56.0	3.7 - 3800.0	x10 ⁶ CFU/g	
Lactobacillus species	7.9 *L	8.6 - 6200.0	x10 ⁵ CFU/g	
Clostridium species	48.0	5.0 - 50.0	x10 ⁶ CFU/g	
Enterobacter species	3.6	1.0 - 50.0	x10 ⁶ CFU/g	
Akkermansia muciniphila	27.00	0.01 - 50.00	x10 ³ CFU/g	
Faecalibacterium prausnitzii	56.0	1.0 - 500000	x10 ³ CFU/g	

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ELEVATED PSEUDOMONAS AERUGINOSA LEVEL:

Pseudomonas is found in water and soil as well as fruits and vegetables.

Bottled water can be a common source of infection.

Because the organism is able to survive aqueous environments, it is an important nosocomial pathogen. Pseudomonas can also be found on a number of surfaces and in aqueous solutions.

Pathogenicity:

Pseudomonas is considered an opportunistic pathogen.

Symptoms:

In the gastrointestinal tract it can cause inflammation, epithelial barrier dysfunction, tight cell junction interruption, and intestinal permeability.

Treatment:

Ciprofloxacin is recommended for the treatment of Pseudomonas induced antibiotic-associated colitis. Pseudomonas is usually susceptible to antipseudomonal penicillins, aminoglycosides, carbapenems, 3rd generation cephalosporins and gentamycin.

Other Herbal antimicrobials include:

Pseudomonas aeruginosa shows a high susceptibility rate using a combination of berberine, plant-tannins and oregano.

STREPTOCOCCUS SPECIES:**Description:**

Streptococcus is a gram-positive bacteria in the Firmicutes phylum. Streptococcus is generally a common isolate from gut flora. However, emerging research suggests that high levels in the intestine may result from low stomach acid, PPI use, reduced digestive capacity, SIBO or constipation; Elevated levels may also be indicative of intestinal inflammatory activity, and may cause loose stools.

Sources:

Recent infections with streptococcus pyogenes or scarlet fever can be linked to the presence of this species in faeces.

Treatment:

Treatment of streptococcus in gut flora is not always recommended. A practitioner may take into consideration a range of patient factors and symptoms to determine if treatment is necessary. In this case please refer to the 4R treatment protocol located at the end of this report.

METHANOBACTERIACEAE:

Family of bacteria-like microbes that produce methane. Facilitates carbohydrate fermentation and short-chain fatty acid production by beneficial bacteria.

LOW levels may indicate reduced production of short-chain fatty acids and may be associated with inflammation.

HIGH levels linked to chronic constipation, as well as some types of SIBO and IBS.

Potential Autoimmune Comments**ELEVATED CITROBACTER FREUNDII LEVEL:****Sources:**

Citrobacter is a gram-negative bacteria in the Enterobacteriaceae family. Common in the environment and may be spread by person-to person contact. Several outbreaks have occurred in babies in hospital units. Isolated from water, fish, animals and food.

Pathogenicity:

Citrobacter is considered an opportunistic pathogen and therefore can be found in the gut as part of the normal flora.

Symptoms:

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Citrobacter has occasionally been implicated in diarrheal disease, particularly *C. freundii* and *C. diversus* and *C. koseri*

Treatment:

Treatment is not generally required in low amounts. However, where high levels are present and patients are symptomatic. A combination of oregano, plant tannins and oregano has shown high susceptibility.

For further information, refer to the 4R treatment protocol located at the end of this report.

ELEVATED KLEBSIELLA PNEUMONIAE LEVEL:**Sources:**

Klebsiella is part of the Enterobacteriaceae family and as such is a gram-negative bacteria. Klebsiella is Isolated from foods and environmental sources. Klebsiella appears to thrive in individuals on a high starch diet.

Pathogenicity:

Part of the normal gut flora in small numbers, but can be an opportunistic pathogen.

Klebsiella is capable of translocating from the gut when in high numbers.

Certain strains of *K. oxytoca* have demonstrated cytotoxin production.

Symptoms:

When Klebsiella is found in considerable amounts, symptoms may include abdominal pain, bloating, loose stools, anxiety, insomnia, food allergies.

Treatment:

Avoiding carbohydrates such as rice, potatoes, flour products and sugary foods reduces the amount of Klebsiella in the gut

Other Herbal antimicrobials include:

Lemon and clove, Burr marigold, Thyme, Licorice, euphobia, cordyceps. For further treatment options, refer to the 4R treatment protocol located at the end of this report.

FUSOBACTERIUM SPECIES:

Fusobacterium species is a gram-negative bacteria in the Fusobacteria phylum. The bacteria is a common member of the human oral microbiome, this pro-inflammatory bacterium can also be found in the human gut. In the mouth, high levels are strongly linked to oral hygiene. In the gut, high levels have been observed in individuals with colon cancer and appendicitis.

Sources:

It primarily uses protein as its main source. However, research also shows that it can thrive from sugar.

Treatment:

Antimicrobial botanicals such as berberine, oregano, quercetin, curcumin, green and black tea extracts, blueberry extract, cinnamon and rosemary have shown to decrease levels.

Bacterial Pathogens Comment**ELEVATED HELICOBACTER PYLORI LEVEL:**

Helicobacter Pylori has been detected in this sample. This indicates the presence of a current infection and is not affected by the presence of other organisms, antacids, barium sulphate, blood or fat.

If the patient has diagnosed gastritis or a peptic ulcer consider:

- Standard triple therapy: e.g. PPI, clarithromycin and amoxicillin/or metronidazole, 7-14 days
- Lactobacillus Probiotics

If the patient is asymptomatic consider natural products including:

- Black currant seed oil and fish oil
- Lactobacillus Probiotics
- Vitamin C
- Mastic gum.

Virulence factors of *H. pylori*, such as *cagA*, *vacA*, *dupA*, *iceA*, *oipA* and *babA*, have been demonstrated to be predictors of severe clinical outcomes. Positive virulence genes represent the potential for an *H. pylori* strain to create pathology. Information about the potential for virulence may help you as the clinician determine if *H. pylori* treatment is necessary.

Phyla Microbiota Comment**ELEVATED FIRMICUTES LEVEL:**

Gram-positive Firmicutes are bacterial phyla that make up a large proportion of the entire human digestive tract, including the mouth, nose, throat, and colon. An elevated result of firmicutes are considered an unfavourable outcome as they make your body thrive for sugar in order for firmicutes to survive in the gut. Elevated Firmicutes may generate inflammation, dysbiosis, maldigestion or hypochlorhydria.

Firmicutes also compete and kill off surrounding microorganisms for their sugar supply. When there is an over consumption of all that extra sugar consumed, unfortunately it will only have one pathway and that is to be converted into fat increasing insulin levels. Studies have shown that when there is a higher ratio of Firmicutes within the gastrointestinal tract, that there is a link to obesity.

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Therefore, levels of firmicutes within reference range are preferred.

Treatment:

Polyphenols are recommended to lower levels of firmicutes and raise the level of bacteroidetes. An abnormal result in one or both of these phylum suggest imbalanced normal microbes in the GI tract.

Normal Bacterial Flora Comment

LOW LACTOBACILLUS SPECIES LEVEL:

Lactate-producing bacteria in the Firmicutes phylum.

Low levels may be due to low carbohydrate intake or high salt intake, and may also indicate reduced mucosal health.



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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 lactise, lactobacillus acidophilus, lactobacillus plantarum, lactobacillus casei, bifidobacterium breve, bifidobacterium bifidum, bifidobacterium longum, lactobacillus salivarius ssp 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