

**TEST PATIENT****Dr.TEST DOCTOR**

P: 1300 688 522  
 E: info@nutripath.com.au  
 A: PO Box 442 Ashburton VIC 3142

Date of Birth : 01-Jan-1962  
 Sex : F  
 Collected : 23/Aug/2019  
 Received: 23-Aug-2019  
 123 TEST STREET  
 BURWOOD VIC 3125  
 Lab id : **3629215** UR#:

TEST HEALTH CENTRE  
 123 TEST STREET  
 BURWOOD VIC 3125

## COMPLETE DIGESTIVE STOOL ANALYSIS - Level 3+

### MACROSCOPIC DESCRIPTION

	Result	Range	Markers
Stool Colour	<b>Brown</b>	Brown	<b>Colour</b> - Brown is the colour of normal stool. Other colours may indicate abnormal GIT conditions.
Stool Form	<b>Unformed</b>	Formed	<b>Form</b> -A formed stool is considered normal. Variations to this may indicate abnormal GIT conditions.
Mucous	<b>NEG</b>	< +	<b>Mucous</b> - Mucous production may indicate the presence of an infection, inflammation or malignancy.
Occult Blood	<b>+</b>	< +	<b>Occult Blood</b> - The presence of blood in the stool may indicate possible GIT ulcer, and must always be investigated immediately.

### Macroscopy Comment

BROWN coloured stool is considered normal in appearance.

UNFORMED/LIQUID stools may indicate the presence of infection and/or inflammation. Consider dysbiosis, food sensitivity, high dose vitamin C and magnesium, infection, intestinal permeability, laxative use, malabsorption, maldigestion, stress. Other causes: bacterial, fungal, viral and other parasitic infections.

Treatment:

- Investigate and treat possible underlying cause.
- Assess other CDSA markers such as pH, pancreatic elastase 1 & microbiology markers."

BLOOD PRESENT: Consider blood vessel injury, inflammation, infection, ulceration, hemorrhoids, severe constipation & other injury.

Treatment:

- Investigate the cause of bleeding using other diagnostic tools such as endoscopy
- Assess other CDSA markers such as calprotectin, H. pylori, M2PK & microbiology markers.



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**MICROSCOPIC DESCRIPTION**

	Result	Range	Markers
RBCs (Micro)	<b>+</b>	< +	<b>RBC(Micro)</b> - The presence of RBCs in the stool may indicate the presence of an infection, inflammation or haemorrhage.
WBCs (Micro)	<b>1</b>	< 10	<b>WBC(Micro)</b> - The presence of WBCs in the stool may indicate the presence of an infection, inflammation or haemorrhage.
Food Remnants	<b>+</b>	< ++	<b>Food Remnants</b> - The presence of food remnants may indicate maldigestion.
Fat Globules	<b>NEG</b>	< +	<b>Fat Globules</b> -The presence of fat globules may indicate fat maldigestion.
Starch	<b>NEG</b>	< +	<b>Starch</b> - The presence of starch grains may indicate carbohydrate maldigestion.
Meat Fibres	<b>NEG</b>	< +	<b>Meat Fibres</b> - The presence of meat fibres may indicate maldigestion from gastric hypoacidity or diminished pancreatic output.
Vegetable Fibres	<b>+</b>	< ++	<b>Vegetable Fibres</b> - The presence of vegetable fibres may indicate maldigestion from gastric hypoacidity or diminished pancreatic output.

**Microscopy Comment**

RED BLOOD CELLS DETECTED: Consider blood vessel injury, inflammation, infection, ulceration, hemorrhoids, severe constipation & other injury.

Treatment:

- Investigate the cause of bleeding using other diagnostic tools such as endoscopy
- Assess other CDSA markers such as calprotectin, H. pylori, M2PK & microbiology markers.

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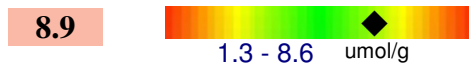
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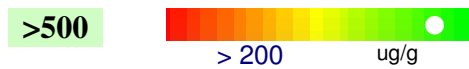
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**DIGESTIVE AND ABSORPTION MARKERS****Chymotrypsin**

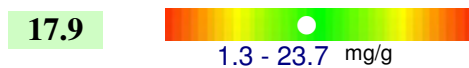
**Chymotrypsin** - Chymotrypsin is involved in protein digestion. Low levels of chymotrypsin may indicate protein maldigestion due to pancreatic insufficiency.

**Short Chain Fatty Acids, Putrefactive**

**Short Chain Fatty Acids, Putrefactive** - Putrefactive SCFAs are produced when anaerobic bacteria ferment undigested protein, indicating protein maldigestion.

**Pancreatic Elastase 1**

**Pancreatic Elastase** is used to assess pancreatic exocrine function. Pancreatic insufficiency is associated with diabetes mellitus, cholelithiasis, pancreatic tumour, cystic fibrosis and osteoporosis. This test is not affected by substitution therapy with enzymes of animal origin. PE-1 levels decline with age.

**Long Chain Fatty Acids**

**Long Chain Fatty Acids** - Elevated levels of total LCFAs in the stool may indicate inadequate lipid absorption

**Absorption Comment**

Putrefactive SCFAs are ELEVATED:  
 Suspect hypochlorhydria, exocrine pancreatic insufficiency, or protein malabsorption.  
 Other causes include bacterial overgrowth of the small bowel, gastrointestinal disease, and/or rapid transit time.

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 produce on average 500 ug/g of PE-1. Thus, levels below 500 ug/g and above 200 ug/g suggest a deviation from optimal pancreatic function.  
 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.

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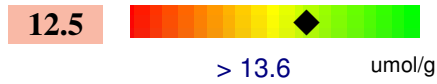
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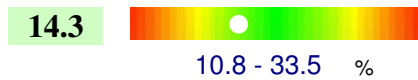
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**METABOLIC MARKERS AND SHORT CHAIN FATTY ACIDS**

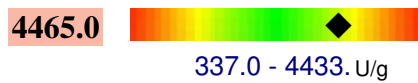
## Short Chain Fatty Acids, Beneficial



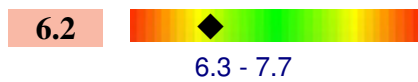
## Butyrate



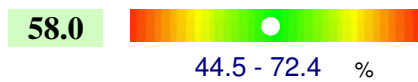
## b-Glucuronidase



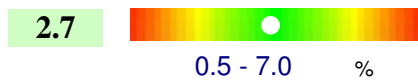
## pH



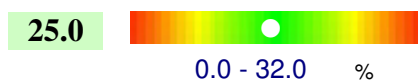
## Acetate



## Valerate



## Propionate

**Markers**

**Short Chain Fatty Acids, Beneficial (Total)** - Elevated SCFAs may indicate bacterial overgrowth. Inadequate SCFAs may indicate inadequate normal flora.

**Butyrate** - Decreased Butyrate levels may indicate inadequate colonic function.

**b-Glucuronidase** - Increased levels of b-Glucuronidase may reverse the effects of Phase II detoxification processes.

**pH** - Imbalances in gut pH, will influence SCFA production and effect.

**Acetate** - Decreased Acetate levels may indicate inadequate colonic function.

**Valerate** - Decreased Valerate levels may indicate inadequate colonic function.

**Propionate** - Decreased Propionate levels may indicate inadequate colonic function.

**Metabolic Markers Comment**

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

Beneficial SCFAs are LOW:

Also indicated by Lactobacilli <2+, Bifidobacteria <4+, E.coli <4+

Suspect increased susceptibility to pathogenic bacterial infection, increased toxic enzyme exposure, increased risk for mucosal barrier defects and immune dysregulation.

beta GLUCURONIDASE ELEVATED:

Suspect increased activation and enterohepatic recirculation of toxins, hormones, and various drugs within the body. Increased burden on glucuronidation pathway is associated with increased risk of colorectal, prostate and breast cancers.

Treatment:

Consider Calcium-D-glucarate which may assist with lowering B-glucuronidase levels. It is also suggested to introduce a low-calorie/vegetarian diet for 4 weeks which may also be beneficial with lowering faecal B-glucuronidase levels.

LOW pH PRESENT: High Acidity stool.

Consider bacterial overgrowth, lipid or carbohydrate malabsorption, rapid transit time, pancreatic insufficiency.

Treatment:

- Supplement digestive enzymes or other digestive aids
- Assess other CDSA markers such as fat globules, food remnants, transglutaminase IgA & microbiology markers.
- Investigate causes of malabsorption or diarrhoea.



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**INFLAMMATION MARKERS**

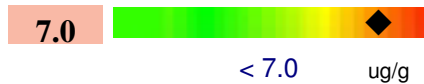
Calprotectin

Range

Normal	<50 ug/g
<b>78.0</b>	Mildly Elevated 50 -100 ug/g
Highly Elevated	100+ - 250 ug/g
Extremely Elevated	>250 ug/g

**Comments:** Calprotectin is a protein that is abundant in neutrophilic granulocytes and is a sensitive and direct indicator of bowel inflammation. In patients with Inflammatory Bowel Disease (Crohn's Disease, Ulcerative Colitis), including those in relapse, there is a close positive correlation between faecal Calprotectin levels and the degree of inflammation; patients with Irritable Bowel Syndrome do not have elevated levels of Calprotectin. Calprotectin is very stable in stool samples.

Eosinophil Protein X



**Comment** - Eosinophils are functionally involved in the pathophysiology of various inflammatory disorders of the gut. Eosinophil protein X (EPX) offers an alternative to invasive procedures, for evaluating inflammatory disease activity and for predicting relapses in patients with IBD.

Transglutaminase IgA



**Comment-** Tissue transglutaminase is the most specific test for Coeliac Disease. Gluten-sensitive patients react to Gliadin (found in wheat, barley and rye gluten) and to an antigenic component of the gut endomysium, now known to be tissue Transglutaminase (tTg), which uses gliadin as a substrate in creating antigenic neo-epitopes which generate the immune response in genetically susceptible individuals. After several weeks on a Gluten-free diet, tTg antibody levels may return towards normal levels.

**Inflammation Markers Comment**

**CALPROTECTIN MILDLY ELEVATED:**  
 MILD TO MODERATE inflammation of the GIT.  
 Patients without GIT inflammation and untreated IBS sufferers have levels below 50 ug/g. The inflammatory response could be due to IBD, infection, polyps, neoplasia, or the use of non-steroidal anti-inflammatory drugs (NSAIDs).  
 Calprotectin may also be elevated in children with chronic diarrhea secondary to cow's milk allergy or multiple food allergies.

Whether inflammatory or neoplastic, the cause of elevated calprotectin MUST be ascertained by endoscopy or radiography. If these evaluations do not yield signs of overt disease, other tests may be considered to uncover causes of chronic bowel inflammation:

- Intestinal Dysbiosis Assessment - Organic Acids
- IgG/IgA 96 Food Allergy Assessment
- Celiac Antibodies Panel

**FAECAL TRANSGLUTAMINASE IgA: POSITIVE**  
 Tissue Transglutaminase is the most specific test for Coeliac Disease.  
 Levels greater than 100 are deemed as POSITIVE.

Treatment:  
 Avoid gluten containing foods.  
 Also assess IgG/IgA Food sensitivity tests to identify specific food intolerances.

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**TUMOUR/ULCER MARKERS**

H. PYLORI, Antigen

**POSITIVE**

**Comment** - Helicobacter Pylori antigen indicates the patient's current status and is not affected by the presence of other organisms, antacids, barium sulphate, blood or fat. This test may be used on its own to monitor the success of eradication therapy one month after completion of the therapy.

M2 Pyruvate Kinase

**3.2****Range**

&lt;= 4U/ml

&gt;4 U/ml

**Comment** - The majority of human tumours strongly over-express the tumour M2 isoform of the glycolytic enzyme Pyruvate Kinase (M2-PK), which is released from tumour cells and is quantitatively detectable in body fluids. M2-PK is the key regulator of tumour metabolism and its measurement in faeces identifies gastrointestinal tumours, even in the absence of gastrointestinal bleeding.

**Tumour/Ulcer Markers Comment**

H. PYLORI ANTIGEN:

This test, if POSITIVE, 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: eg. 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.

M2-PYRUVATE KINASE: Negative

M2-PK values greater than 4 U/mL may indicate gastrointestinal adenoma, colorectal cancer or other gastrointestinal carcinomas.

Tumor M2-PK has a higher sensitivity than markers CEA and CA72-4, and M2-PK values greater than 4 U/mL may indicate gastrointestinal adenoma, colorectal cancer or other gastrointestinal carcinomas.

M2-PK has a lower sensitivity and specificity in diagnosing pancreatic cancer compared to Ca 19-9. However, in patients with adenocarcinoma there is a simultaneous increase of M2-PK and Ca 19-9. In addition, M2-PK is more commonly elevated in metastatic disease and may be an additional criterium to decide on radical surgery of pancreatic cancer.

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**BENEFICIAL BACTERIA**

	Result	Range
Bifidobacteria	+	2 - 4 +
Lactobacilli	+	2 - 4 +
Eschericia coli	+	2 - 4 +
Enterococci	+	1 - 2 +

**COMMENTS:**

Significant numbers of Lactobacilli, Bifidobacteria and E coli are normally present in the healthy gut: Lactobacilli and Bifidobacteria, in particular, are essential for gut health because they contribute to 1) the inhibition of gut pathogens and carcinogens. 2) the control of intestinal pH, 3) the reduction of cholesterol, 4) the synthesis of vitamins and disaccharidase enzymes.

**OPPORTUNISTIC AND DYSBIOTIC BACTERIA**

	Result	Range
Klebsiella	NEG	<+++
Citrobacter	NEG	<+++
Pseudomonas	++++	<+++
Proteus	NEG	<+++
Campylobacter	NEG	<+
Salmonella	NEG	<+
Streptococcus	++++	<+++
Yersinia	NEG	<+
Other Bacteria.	+++	<+++

**COMMENTS:**

Commensal bacteria are usually neither pathogenic nor beneficial to the host GI tract. Imbalances can occur when there are insufficient levels of beneficial bacteria and increased levels of commensal bacteria. Certain commensal bacteria are reported as dysbiotic at higher levels. Dysbiotic bacteria consist of known pathogenic bacteria and those that have the potential to cause disease in the GI tract. A detailed explanation of bacteria that may be present can be found in the Pathogen Summary at the end of this report.

**YEASTS**

	Result	Range
Candida albicans	+	<+
Geotrichum spp	NEG	<+
Rhodotorula spp	NEG	<+
Other Yeasts	NEG	<+

**COMMENTS:**

Yeast may normally be present in small quantities in the skin, mouth, and intestine. A detailed explanation of yeast that may be present can be found in the Pathogen Summary at the end of this report.

**PARASITES**

	Result	Range
Blastocystis Hominis	+	<+
Dientamoeba fragilis	NEG	<+
Cryptosporidium	NEG	<+
Giardia lamblia	NEG	<+
Entamoeba Histolytica	NEG	<+
Other Parasites	NEG	<+

**COMMENTS:**

Parasites are organisms that are not present in a normal/healthy GIT. A detailed explanation of parasites that may be present can be found in the Pathogen Summary at the end of this report.



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**ANTIBIOTIC SENSITIVITIES and NATURAL INHIBITORS**

	<b>Streptococcus agalactiae Group B</b>	<b>Pseudomonas aeruginosa</b>
<b>Antibiotics</b>	Susceptible	Susceptible
Ampicillin	YES	NO
Augmentin	NO	NO
Ciprofloxacin	NO	YES
Norfloxacin	NO	NO
Meropenem	NO	NO
Cephalothin	NO	NO
Gentamycin.	NO	NO
Trimethoprim/Sulpha	NO	NO
Erythromycin	NO	NO
Penicillin.	NO	NO
<b>Inhibitors</b>	Inhibition %	Inhibition %
Berberine	60%	60%
Black Walnut	60%	60%
Caprylic Acid	60%	60%
Citrus Seed	60%	60%
Coptis	60%	60%
Garlic-	60%	60%
Golden seal	60%	100%
Oregano	60%	80%

**LEGEND**





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**YEAST - SENSITIVITIES and NATURAL ANTIFUNGALS**

**Candida albicans**

**Antifungals**

Inhibition

Fluconazole	<b>&lt;=0.5=S</b>
Voriconazole	<b>&lt;=0.12=S</b>
Itraconazole	

**INHIBITION CATEGORY**

- R** Resistant This category indicates that the organism is not inhibited by obtainable levels of the pharmaceutical agent
- I** Intermediate This category indicates where the minimum inhibition concentrations (MIC) approach obtainable pharmaceutical agent levels and for which response rates may be lower than for susceptible isolates
- SDD** Susceptible, Dose Dependent This category indicates that clinical efficacy is achieved when higher than normal dosage of a drug is used to achieve maximal concentrations
- S** Susceptible This category indicates that the organisms are inhibited by the usual achievable concentration of the agent
- NI** No Interpretative Guidelines This category indicates that there are no established guidelines for MIC interpretation for these organisms

**Non-absorbed Antifungals**

Inhibition %

Nystatin	<b>60%</b>
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**Natural Antifungals**

Inhibition %

Berberine.	<b>60%</b>
Black Walnut.	<b>60%</b>
Citrus Seed.	<b>60%</b>
Coptis.	<b>60%</b>
Garlic	<b>80%</b>
Golden seal.	<b>80%</b>
Oregano.	<b>80%</b>

**LEGEND**

Low Inhibition

High Inhibition



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**PATHOGEN SUMMARY****OTHER BACTERIA PRESENT:**

<b>Organism</b>	<b>Result</b>	<b>Range</b>	<b>Classification</b>
The following group of organisms are deemed commensal, being neither beneficial or pathogenic. Where present, often inadequate levels of beneficial bacteria are also noted. These organisms may become dysbiotic at high levels where treatment may become necessary.			

**PLEASE NOTE:**

**Clostridium difficile isolated. Endotoxin A and B not detected.**

<b>Organism</b>	<b>Result</b>	<b>Range</b>	<b>Classification</b>
Bacillus species	3+	0 - 3+	Non-Pathogen
Pseudomonas aeruginosa	4+ * H	0 - 3+	POSSIBLE Pathogen
Streptococcus agalactiae Group B	4+ * H	0 - 3+	POSSIBLE Pathogen

**OTHER YEASTS PRESENT:**

<b>Organism</b>	<b>Result</b>	<b>Range</b>	<b>Classification</b>
Candida albicans	1+	0 - 1+	Non-Pathogen

**OTHER PARASITES PRESENT:**

<b>Organism</b>	<b>Result</b>	<b>Range</b>	<b>Classification</b>
Blastocystis hominis	1+ * H	<1+	<b>PATHOGEN</b>

**BACILLUS SPECIES:**

Bacillus species are spore forming, gram-positive rods belonging to the Bacillaceae family. There are currently 50 valid species within the genus.

**Sources:**

Meat dishes are a common source of infection in other species of Bacillus such as B. subtilis and B. licheniformis.

**Pathogenicity:**

As yet, no toxins or other virulence factors have been identified in association with the symptoms that accompany non-B. cereus species.

**Symptoms:**

B. licheniformis and B. subtilis are associated with food-borne diarrheal illness.

**Treatment:**

B. species is almost always susceptible to clindamycin, erythromycin and vancomycin.

**PSEUDOMONAS SPECIES:****Description:**

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:**

Associated with diarrhoeal infection, particularly in the immunocompromised host.

**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:**



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Andrographis, Tea tree, Prunus armeniaca, Prunella vulgaris, Nelumbo nucifera, Panax notoginseng root, Panax notoginseng flower, Punica granatum, Areca catechu and Imperata cylindrical.

#### **STREPTOCOCCUS:**

##### **Description:**

Streptococcus is a common isolate from gut flora. With the exception of very rare cases, streptococcus species are not implicated in gastric pathogenesis. However, there has been correlations with the presence of streptococcus pyogenes in patients who have, or have recently had scarlet fever. Streptococcus species are also implicated in urinary tract infections and faecal flora are the common source of contamination for urinary tract infections.- 3

##### **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.

#### **CANDIDA**

##### **Sources:**

Most sources of Candida infection are thought to be of endogenous origin. While yeast are ubiquitous in the environment and are found on fruits, vegetables and other plant materials, contamination from external sources is linked to patients and health care workers.

##### **Pathogenicity:**

A normal inhabitant of the GI tract. May become an opportunistic pathogen after disruption of the mucosal barrier, imbalance of the normal intestinal flora and/or impaired immunity. Risk factors for colonization include: Antibiotics, corticosteroids, antacids, H2 blockers, oral contraceptives, irradiation, GI surgery, Diabetes mellitus, burns, T cell dysfunction, chronic stress and chronic renal disease.

##### **Symptoms:**

The most common symptom attributable to non-invasive yeast overgrowth is diarrhea. Symptoms of chronic candidiasis affect four main areas of the body.

1. Intestinal system - symptoms include: diarrhea, constipation, abdominal discomfort, distention, flatulence and rectal itching.
2. Genital Urinary system - symptoms include: menstrual complaints, vaginitis, cystitis and urethritis.
3. Nervous system - symptoms include: severe depression, extreme irritability, inability to concentrate, memory lapses and headaches.
4. Immune system - symptoms include urticaria, hayfever, asthma, and external otitis. Sensitivities to tobacco, perfumes, diesel fumes and other chemicals.

##### **Treatment:**

Currently, standard texts provide no specific antifungal guidelines for GI overgrowth of Candida.

Oral azoles have been recommended for extra intestinal infections.

Susceptibility testing is advised due to increasing drug resistance.

#### **BLASTOCYSTIS HOMINIS:**

B. hominis has recently been reclassified as a protozoan, of which there are thought to be four separate serologic groups.

##### **Sources:**

This organism is transmitted via the fecal-oral route or from contaminated food or water. Prevention can be enhanced by improving personal hygiene and sanitary conditions.

**TEST PATIENT****Dr.TEST DOCTOR**

P: 1300 688 522  
E: info@nutripath.com.au  
A: PO Box 442 Ashburton VIC 3142

Date of Birth : 01-Jan-1962  
Sex : F  
Collected : 23/Aug/2019  
Received: 23-Aug-2019  
123 TEST STREET  
BURWOOD VIC 3125  
Lab id : **3629215** UR#:

TEST HEALTH CENTRE  
123 TEST STREET  
BURWOOD VIC 3125

**Pathogenicity:**

When this organism is present in the absence of any other parasites, enteric organisms or viruses, it may be considered the etiological agent of disease.

**Symptoms:**

Symptoms can include: diarrhea, cramps, nausea, fever, vomiting and abdominal pain. *B. hominis* has been associated with irritable bowel syndrome, infective arthritis and intestinal obstruction.

**Treatment:**

Currently, Metronidazole (Flagyl) is considered the most effective drug (750 mg tid x 10 days). Iodoquinol (Yodoxin) is also an effective medication (650 mg tid x 20 days). Recommended therapy can also eliminate *G. lamblia*, *E. histolytica* and *D. fragilis*, all of which may be concomitant undetected pathogens and part of patient symptomology.



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# The Four “R” Treatment Protocol

<b>REMOVE</b>	<p>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.</p> <p>Consider testing IgG96 foods as a tool for removing offending foods.</p>	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
<b>REPLACE</b>	<p>In cases of maldigestion or malabsorption, it may be necessary to restore proper digestion by supplementing with digestive enzymes.</p>	DIGESTIVE SUPPORT	Betaine hydrochloride, tilactase, amylase, lipase, protease, apple cider vinegar, herbal bitters
<b>REINOCULATE</b>	<p>Recolonisation with healthy, beneficial bacteria. Supplementation with probiotics, along with the use of prebiotics helps re-establish the proper microbial balance.</p>	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
<b>REPAIR &amp; REBALANCE</b>	<p>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.</p>	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